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AN UNUSUAL OUTBREAK OF TYPHOID FEVER

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Soon after the opening of the University of Wisconsin on Oct. 1, 1908, there occurred a localized outbreak of typhoid fever which presented such unusual features that we are making a record of it, hoping that it may prove useful to those interested in this disease, and especially to those having supervision of students at centers of education.

Very near the campus is an unusually well-kept and popular boarding-house, patronized not only by students, but also by a number of the younger members of the faculty. It has been running for some six years, and no trouble has occurred there before. As in many other such places, students are employed as waiters and helpers in the pantry.

The house opened with the beginning of the scholastic year, and soon had from ninety-five to one hundred boarders, many applicants being turned away. The working force consisted of the landlady and her two sisters, a cook, two young women who had just reached America from Norway, and thirteen student helpers, most of whom were waiters. Two or three of them assisted in scraping the used plates and in wiping and stacking the clean plates and dishes. While hot water was used, there was no attempt made at thorough sterilization of utensils.

About the middle of October about fifty or sixty of the boarders were attacked by diarrhea and nausea, some being sick for several days. The majority, however, recovered promptly without having consulted physicians. It has not been possible to determine the cause of this outbreak, but it was attributed by some to veal and by others to bananas. A number who ate of both escaped, however.

During the last week of October a number of the boarders became ill, the general symptoms being headache, lassitude, loss of appetite, and pains in the limbs. The general opinion among the sufferers seems to have been that they were suffering from grip. The first case reported to the Hygienic Laboratory was on October 29, the patient having been at that time sick for one week. Others followed in rapid succession, and by November 15 more than forty cases of illness were known to exist.

The symptoms in most cases were not well defined, but typhoid fever was suspected in several by the physician in attendance. The first Widal examinations made in the laboratory were negative. A number of the sick students went at once to their homes without having seen physicians. Many of these were heard from later, through the sending of their blood to the laboratory for examination, a positive Widal being found in the great majority of them. Some returned to their work, but continued in poor condition, and finally reported at the laboratory for examination. In a number of cases the symptoms were so mild that the men continued at their work without medical advice; some did half work, resting part of the time.

As far as possible all such cases were investigated, those of students who went home and those of students who did half work, and in all was a positive Widal reaction found. A typical case may be given.

M., the son of a physician, was one of those affected with nausea and diarrhea. He went to his home, where his father made a diagnosis of ptomain poisoning. On his return to the university he continued in poor condition, and finally reported to us on October 30. We found him cyanotic, anemic, and with a temperature of 97.5 F. His blood gave a high positive Widal.

Among those stricken were the two Norwegian girls who worked in the kitchen and pantry. In less than one month forty-one cases of typhoid fever occurred among those boarding or working at this house, three of which terminated fatally. Only one case occurred later than November 15—that of a student waiter.

During the same time there was only one case of typhoid fever among the students not boarding at this house, and only three or four other cases in the city of Madison. Madison is free from typhoid fever at all times, the water being of unusual purity.

Every possible source of infection was studied. The water used at the boarding-house was from the city supply, which is of known excellence. Bacteriologic examinations were made, however, and no pollution detected. The ice was found to be of exceptional purity on several examinations. Furthermore, its source was traced to an inland city, the inhabitants of which were free from any outbreak, though this same supply had been used continuously all summer. It had been harvested at least six months previously, and it is known that the typhoid germ seldom survives freezing for this length of time. The milk supply was investigated, but no cause for suspicion found.

The possibility of infection through raw vegetables or oysters was excluded. Only one old privy vault existed in the neighborhood, and no infection of this could be traced. The windows of the boarding-house were screened, and flies had not been troublesome.

Attention naturally turned to the detection of a typhoid-carrier among those employed in preparing and

serving the meals. The following history was elicited: E. L., a student employed to scrape, wipe, and stack plates and dishes, had resumed his duties on the opening of the house, having served in this capacity during the previous year. Immediately on his return to work he complained of having "no taste for food," which he attributed to the change of life from the country to the city. About October 20 he gave notice to the landlady that he would probably have to give up work on account of illness, and within a day or two went to Janesville, Wis., where he consulted an optician for his intense headaches, believing that his eyes were at fault. His parents urged him to remain at home until he felt better, and observed at this time that he had fever. He returned to work, however, but on October 30 gave up his place and went home, where he died two weeks later. The death of this student made it impossible to obtain a more complete history, but there can be no question that he was in the early stages of typhoid fever when he returned to Madison from vacation. We have not been able to find out at what time his bowels became loose. His duties were such that he handled utensils after they had been washed, affording an opportunity for their infection.

The exclusion of every other possible source has forced the conviction that the outbreak was caused by this method of infection. Furthermore, the outbreak ceased shortly after this student went home, only one case having occurred after such a lapse of time as to throw any question on this source of infection. In this last case the student appeared to be ill at least two weeks before he finally succumbed on November 25. He was repeatedly questioned by one of us (Dr. R.), who believed he was ill. He was an advanced student in bacteriology, had given much assistance in studying the outbreak, and was a man of more than average ability; hence his statements were given more weight than seems to have been justified. His blood gave a high and rapid positive Widal as soon as he complained of illness, indicating an infection of some standing.

The boarding-house was closed for several days on November 6 and disinfected, after which it was allowed to open again, and no case of illness has occurred since.

One fact seems to militate against the above explanation, namely, the rapidity with which the patients came down, the great majority of them giving up between November 3 and 10, the 3d, 6th, and 7th yielding a particularly large number. This may have indicated that a large number of persons were infected at the same time. Probably suggestion had something to do with this, as on these days the house was inspected, closed, and fumigated, and there was considerable excitement over the large number of students taken ill. This, however, only explains the giving up—not the infection.

Another problem which presented itself was the possibility that the choleraic outbreak in November may have been due to a massive dose of typhoid bacilli. If such was the case the origin of the germs remains a mystery. Paratyphoid appears to follow meat poisoning, but all of our cases gave typhoid agglutination—none paratyphoid—so that paratyphoid may be excluded.

In order to gain as much light on this point as possible we have traced as many of these students as we could find and examined their blood by the Widal test. Two gave a prompt agglutination, though sick only for two days, and having no previous history of typhoid fever. All others were negative.

While every clinical type of the disease was observed in this outbreak, certain features seemed to have been predominant. The headache was in the occiput and pain extended down the back of the neck. Constipation was more frequent than diarrhea.

Before allowing any one who had been ill to return to work in any capacity in this house the urine and feces were examined. No typhoid-carrier was found among them and no case of sickness has developed since November.

THE COMBINED COURSE FOR THE DEGREES OF A.B., OR B.S., AND M.D.

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Within the last decade there has developed a plan in several American universities under which a student takes, during the junior and senior years, those sciences which constitute the first two years of the medical curriculum. Credit for the successful completion of the work in these branches is permitted to count both toward a baccalaureate degree in the collegiate department and toward the degree of M.D. in the medical school. The student is thus able to secure the baccalaureate degree and the degree of M.D. in from six to seven years after his completion of the high school course and his matriculation in the university.

The plan has extended rapidly, it being now in operation in over thirty American universities. It is believed by many educators to be the best solution yet offered of the problem of how to provide a good many students with a fairly adequate premedical training and to induct them into the study and later the practice of medicine at a reasonably early age.

On the other hand, the custom is pronounced by one distinguished educator to be "pernicious," by another to be "a very dangerous process," that, indeed, "there is no more alarming process now going on in the United States in regard to education than this." Associations of college presidents have protested against it, and a resolution to prohibit the practice adopted a year ago, is now under reconsideration by the Board of Regents of the University of the State of New York.

The importance of the question warrants the fullest discussion by all who are interested in the subject. It is the purpose of this paper to inquire whether the combined course is a dangerous tendency which degrades the baccalaureate and medical degrees, or whether it is the logical, if not the inevitable, outcome of educational methods now all but universally adopted; whether it has not assisted markedly in elevating the standards of medical education in this country, and in improving the character of the instruction in the fundamental medical sciences.

HISTORY

The plan is the outgrowth of a custom which arose about twenty years ago of granting advanced standing on the medical course, both in time and subject, to the holders of a baccalaureate degree who had completed, in their collegiate course, some of the studies of the medical curriculum. At that time the requirement for admission to most of the American Medical Colleges comprised less than is covered in the first two years of a high school course, and no medical colleges exacted more than a diploma of a four-year high school. It was felt by the medical faculties who instituted the custom that, both because of his more adequate mental

training and greater power of accomplishment and because the college graduate had already completed some of the work of the medical curriculum, he might readily complete the three years medical course in two sessions, and this he was permitted to do; while, later, when the medical course was extended to four years, he was permitted to complete it in three years. It was believed that this concession would encourage young men who contemplated the study of medicine to take a college course before entering the medical school, and this effect it undoubtedly had with many students.

This custom continued in operation very generally among the medical schools until about four years ago, when the rulings of the boards of medical examiners in several states prohibited the practice. How illogical, unjust and unwise were these rulings of the examining boards will be discussed later on in this paper.

THE UNIVERSITY MEDICAL SCHOOL

Some medical schools were at that time departments of universities, and within a few years, by union or affiliation, a considerable number of independent medical schools became such. The application of the custom of granting advanced standing to the graduates of the collegiate departments of their own universities resulted in a combination and shortening of the collegiate and medical courses to six or seven years. Coincident with these developments, a radical change was taking place in the methods and personnel of those engaged in the teaching of the fundamental medical branches—chemistry, anatomy, histology, embryology, physiology, physiologic chemistry and pharmacology, bacteriology and pathology. The rapid progress and growing importance of these branches made it impossible for them to be taught adequately by physicians engaged in medical practice, and pursuing these subjects as an incidental avocation. Within a few years, in all of the better medical schools, they were transferred to men, each of whom devoted his time and energies exclusively to research and teaching in his chosen branch. And thus, with competent instructors and the introduction of laboratory methods with ample equipment, these medical sciences came to be, in the truest sense, branches of general science, in every way as well adapted for purposes of general culture and the development of the mental faculties as are other sciences in the college curriculum. Under the elective system, in vogue in most of the larger universities, the logical outcome was obvious. It can best be stated by the relation of a specific case.

An Illustrative Case.—A few years ago a medical school became affiliated with a neighboring university. The medical faculty had already decided to advance its admission requirements in the near future and to demand the completion of the first two years of the collegiate course in the university, or some other college of equal rank. The required course for the medical degree extended over four sessions of nine months each. In the university the curriculum for the freshmen and sophomore years was in part prescribed, in part elective. It included the courses in physics, chemistry and biology, and gave abundant opportunity to secure the courses in English, German or French, mathematics, history, etc., which the medical faculty deemed requisite for admission to the medical school. The last two years of the curriculum for the baccalaureate degree were elective, except that three months of work was specified in philosophy and psychology. (This provision has subsequently been changed so that the student may take these branches in the first two years if he prefers so to do.) Moreover, the university possessed a department of anatomy, both gross and microscopic, of neurology and of physiology; embryology and bacteriology were taught in the department of zoology. Provision was about to be made for physiologic chemistry, and pharmacology, as, in a large sense, a branch of physiology could readily be provided for, as could fundamental pathology. Under the regulations of the university, in operation since its beginning, a student seeking the degree of bachelor of science could elect for the work of his junior and senior years courses in these departments, and when he had completed them he had completed all the work of the first two years of the medical curriculum prescribed in this as in virtually all other medical schools. The facilities for instruction in these fundamental medical sciences in the university were in every way superior to those in the medical school. The logical result of this situation was a transfer of the work of the first two years of the medical curriculum to the university, and at once it became possible for a student to secure the degree of B.S. in the university and of M.D. from the medical school in from six to six and one-half years. This arrangement involved no concession whatever on the part of the university, no departure from its long-established regulations concerning the baccalaureate degree. So far from any concession being made by the medical school, the change was a distinct gain in every way, the fundamental branches being taught under far better conditions and much more efficiently than ever before.

There was no logical escape from this deduction of the combined course from the conditions exisiting. No university with a medical department, offering instruction in the fundamental medical branches of the proper sort, can deny its students credit in the medical subjects on the course for a bachelor's degree, unless it either repudiates the elective system or declares these subjects not to be branches of general learning. Can the present day university adopt either of these alternatives?

THE ELECTIVE SYSTEM

Of the elective system it is hardly too much to say that its validity has passed beyond the realm of discussion. No other educational method in the last quarter century has made such rapid progress toward universal acceptance. It is in operation to-day in one form or another, more or less completely, in every university of any standing. It will be discussed more fully in a later portion of this paper.

And are not these medical subjects properly included in the university curriculum? Let us inquire.

MEDICAL SUBJECTS BRANCHES OF GENERAL LEARNING

Of chemistry, histology, embryology and bacteriology there can be no question, for they have been taught in many colleges and universities for years—long, indeed, before the question of their relation to the medical curriculum came under discussion. Human anatomy, with dissection, while taught until recent years only in the medical school, is surely a legitimate branch of vertebrate and comparative anatomy—the crowning topic indeed—quite as much as it is a medical subject. No department of anatomy in a university can be regarded as complete unless it offers its students opportunity for the study of the human body. The materials for its pursuit are not so readily procurable as are the bodies of the lower animals, but the experience of many universities, and even of smaller

colleges having no medical departments, has shown that they are not inaccessible under modern statutory provisions. That the application of human anatomy is chiefly to medicine, and that anatomic science originated and was for centuries studied and taught only in the medical schools, does not alter the fact that logically it is a great and important branch of zoology, and, as such, is entitled to a place in the university curriculum.

No science is of more universal interest and importance to all classes of students than physiology, though it is strange that this fact has been so slowly realized and that few subjects have been more inadequately taught. It has long been the custom in most colleges and high schools to offer instruction in physiology consisting of lectures, recitations from a text-book and occasional demonstrative experiments. Physiology can no more be properly taught than can any other science without laboratory experimentation by the individual student. Of late years universities are coming to realize this, and a chair of physiology, occupied by a competent investigator and teacher of this science, devoting his time and energies exclusively thereto, with adequate laboratory equipment and instructional force, is recognized as an essential department of a university. Such a department of physiology is the best possible place for the medical student to study this subject, and it matters little whether the department be called medical or otherwise.

PHARMACOLOGY AND FUNDAMENTAL PATHOLOGY AS GENERAL SCIENCE

There are but two other branches of any moment which are to-day usually included in the first two years of the medical curriculum, namely, pharmacology and pathology, and concerning these there may be more room for discussion—that is, as to their right to be regarded as branches of general learning and so entitled to inclusion in the university curriculum? Two points are to be noted in this connection: first, fundamentally considered both of these subjects are but phases or adjuncts of physiology; second, if this be not comprehended and conceded in any particular institution, they may be deferred to the junior year of the medical course, as is the custom in a number of the best medical schools. This latter alternative will become more feasible as the fifth year of clinical instruction, now contemplated by some of the better schools, and to consist, for most students, of service as an interne in a hospital, comes to be generally adopted.

To return to the first point, it is not difficult to demonstrate that, in the truest sense, pathology and pharmacology are fundamental sciences—essential phases of physiology. Pharmacology, which consists in the study of the effect of drugs on the animal organism, is an indispensable method of physiologic investigation, and its technic is wholly that of the physiologic laboratory. Indeed, while the medical student ordinarily would pursue the study of drug effects somewhat farther than would the student of pure physiology, no one can proceed very far in the latter branch without taking up the methods of pharmacology and he is constantly resorting to them throughout his further study of that science. To proceed further in the pursuit of what we call pharmacology is but to continue work in physiology.

The pathology which is had in mind in this connection is by no means the pathologic anatomy which until recently constituted practically all that was known and taught as pathology. That was, indeed, a purely technical medical subject, related almost exclusively to the curriculum of the medical college proper. It is obvious that a knowledge of the intimate nature of disease in the animal organism could never be derived from an observation, however exhaustive and microscopic, of the end-results of pathologic processes, in a word, from the study of pathologic anatomy. Such a knowledge can only come from a study of the physical and chemical forces which produce these changes. Furthermore, such a study must be largely conducted by the method of experiment, and this, too, on organisms of such simple structure and in such environment as make it possible to know and to control all of the possible factors concerned in producing the changes observed. Such pathology is simply the physiology of the abnormal, or of the normal in an abnormal environment and as such this science is indissolubly bound up with physiology proper. Indeed, pathology has contributed largely to our knowledge of physiology, and such experimental work as that of Loeb and others in the study of simple organisms in an abnormal environment which can be varied accurately and at will, is quite as truly pathology as it is physiology. It is in this kind of pathology that the hope for future progress in that science chiefly lies, and it is with this sort of pathology that the student of medicine must begin his study of the science of disease. It is rapidly coming to make up the major part of the first course in this science as it is taught in the university medical schools. Its methods, its technic, its modes of observation, experiment and deduction differ in no material respect from those of pure physiology and physiologic chemistry, of which it is an adjunct science.

Is such a science not deserving of a place in the university curriculum? If the student of pure science, who has elected physiology as his field, is led to extend his inquiries into the field of the abnormal, shall not the university provide him with a place and facilities for such study? And is the work he does along such lines not quite as potent for the training of the faculties as that he may do in any other science in the curriculum? Is it not quite as deserving of credit in the course for a baccalaureate or for a higher degree as is accomplishment in any other university department? The right of pathology to a place in the university curriculum has been adequately set forth by Prof. E. O. Jordan in a recent address.

THE METHOD OF TEACHING THE FUNDAMENTAL MEDICAL SCIENCES

It is contended by some that the method of teaching these medical sciences to medical students must be essentially different from that by which they would be studied by persons having no intention of entering into clinical or practical medicine. In my opinion this notion is fallacious. Fortunately, in the better medical schools this idea is rapidly coming to be more a matter of theory than of practice, for with the transfer of the teaching of these sciences to the hands of men who are devoting their lives to their pursuit, the method of instruction grows constantly more broad and thorough. No sharp line can be drawn between applied and pure science, and the only effective method of approach in any branch, no matter in what direction it is to be later applied, must be through a broad, comprehensive study of its principles, facts and methods. Such a knowledge is most likely to be secured when the study is at first pursued, with little reference to its later application. The student is then less likely to be distracted into the error of neglecting those phases of the subject which he

fancies are of no importance in the vocation for which he is preparing himself and of laying stress only on those things which he believes to be important. One can not study the application of any branch of learning until he has a fairly comprehensive knowledge of the branch itself. The mistake which our normal schools have made, and which has resulted in such an unsatisfactory product, has been in endeavoring to teach young women and men "how" to teach subjects of which they know little or nothing. An exactly analogous blunder has been made by the medical colleges in attempting to teach medical chemistry, for example, to young men who know no chemistry. To this faulty method is due the fact that so few physicians can read intelligently much of the present day medical literature with its constant reference to modern chemistry and its application to medicine. It is believed that the physicians of the coming generation, who have had their chemical training on the broad, thorough lines of the college or university, will experience much less difficulty in this regard. To students thus trained in chemistry and the other sciences fundamental to medicine, all clinical pathology, medicine, surgery, obstetrics, etc., are simply applied physics, chemistry, anatomy, histology, embryology, physiology, physiologic chemistry, bacteriology, pharmacology, and fundamental pathology, and they will be studying these as "applied" sciences throughout the rest of their lives. It is perhaps a matter of less importance whether these departments of anatomy, etc., be classified as in the college of science or in the college of medicine, though, to my mind, it is a distinct advantage to have them regarded, primarily, as departments of science. The important thing is that the spirit and method of instruction shall possess that breadth of view and insistence on thoroughness and exactitude which has surely, in our past experience, been more commonly found in the college of science. One of the chief fruits of the combined course, as offered in some schools, is the fact that it has resulted in securing for these sciences recognition as branches of general learning—as being "pure" quite as much as "applied" sciences.

DOES THE PLAN DEGRADE THE BACCALAUREATE DEGREE?

With the medical sciences taught along the lines which have been indicated, does their inclusion in the curriculum leading to the baccalaureate degree tend to degrade it? For those who still hold allegiance to the old rigid, classical curriculum, undoubtedly it must seem so, but for those who accept the modern idea of what the baccalaureate degree signifies—an idea all but universally accepted—it is difficult to conceive how any objection can be entertained as to the validity of these medical sciences in such a curriculum. The question of the acceptability of credits for work in these fundamental medical sciences, if we grant their right to a place in the university curriculum, must logically be determined without any reference to their subsequent acceptance in the medical school.

WHAT DOES THE BACCALAUREATE DEGREE STAND FOR?

In former years the degree of A.B. was granted by the American colleges on the completion of a classical course, rigidly prescribed for every student. There probably never was a time when the degree meant exactly the same course of study in any two colleges, but the differences were not material. The degree of B.S. was granted for the successful completion of a course differing from the arts course in the substitution of work in science for some of the Greek, Latin, or other branches, usually in the junior and senior years of the curriculum. In the B.L. or Ph.B. degree the substitution of some modern language for Greek was the essential modification. In most of the large universities, and in many colleges under the elective system, these degrees have ceased to have any such significance. To quote from one of our greatest educators:

> The general growth of knowledge, and the rise of new literatures, arts and sciences during the past two hundred and fifty years have made it necessary to define anew liberal education and hence to enlarge the significance of the degree of bachelor of arts, the customary evidence of a liberal education.
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> Is this traditional degree of bachelor of arts, which, for three hundred years, at least, has had a tolerably clear meaning, to be deprived of all exact significance, so that it will be impossible to tell what one who holds the degree has studied? I reply that the degree will continue to testify to the main fact to which it now bears witness, namely, that the recipient has spent eight or ten years, somewhere between the ages of twelve and twenty-three, in liberal studies.
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> The worthy fruit of an academic culture is an open mind trained to careful thinking, instructed in the methods of philosophic investigation, acquainted in a general way with the accumulated thought of past generations and penetrated with humility. The choice offered to the student does not lie between liberal and professional or utilitarian studies. All studies which are open to him are liberal and disciplinary, not narrow or special. Under this system the college does not demand, it is true, one invariable set of studies of every candidate for the first degree in arts; but its requisites for the degree are none the less high and inflexible, being nothing less than four years devoted to liberal culture.

THE ELECTIVE PRINCIPLE

As to the propriety of allowing the college student to choose his studies, I quote from the same pre-eminent authority:

> The next educational principle which I believe to apply to two-thirds of the entire educational course between five and twenty-five years of age, is the principle of selection or election of studies. In the first three or four years of a child's education, say from five or six to nine years, there are not so many possible subjects of equal value and necessity but that the child may pursue them all to some adequate extent; but by the ninth or tenth year of age more subjects will claim the child's attention than he will have time for and therefore arises the necessity for election of studies. As the child advances from the elementary to the secondary school and from the secondary school to the college, the number and variety of subjects from which to choose will rapidly increase until, in the department of arts and sciences in the university he will find that he cannot attempt to follow the one-twentieth part of the instruction offered him. . . . Who shall make the selection? is really the only practical question. The moment that we adopt the maxim that no subject shall be attempted at all, unless it be pursued far enough to get the training it is fit to supply, we make election or selection of studies a necessity. This principle has now been adopted by all colleges and universities worthy of the name.
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> A mental discipline which takes no account of differences of capacity and taste is not well directed. It follows that there must be variety in education instead of uniform prescription. To ignorant or thoughtless people it seems that the wisdom and experience of the world ought by this time to have produced a uniform course of instruction good for all boys, and made up of studies permanently pre-eminent; but there are two strong reasons for believing that this convenient result is unattainable; in the first place the uniform boy is lacking, and, in the second place, it is altogether probable that the educational value of any established study, far from being permanently fixed, is constantly changing as new knowledge accumulates and new sciences come into being.

IS THE STUDENT COMPETENT TO CHOOSE HIS STUDIES?

And who shall make the selection? Again I quote:

A well-instructed youth of eighteen can select for himself, not for any other boy or for the fictitious universal boy, a better course of study than any college faculty, or any wise man, who does not know him and his ancestors and his previous life, can possibly elect for him. I have never known a student of any capacity to select for himself a set of studies covering four years, which did not apparently possess more theoretical and practical merit for his case than the required curriculum of my college days.

When the revelation of his own peculiar taste and capacity comes to a young man, let him reverently give it welcome, thank God and take courage. Thereafter, he knows his way to happy, enthusiastic work, and, God willing, to usefulness and success.

And if the student's tastes, capacity and ultimate goal incline him to select the fundamental medical sciences as a part of his arts or science course, shall he be denied the privilege? Are these studies not calculated to make for "liberal culture?"

THE CULTURAL VALUE OF THE MEDICAL BRANCHES

I quote again from the same authority:

The training of a medical student, inadequate as it is, offers the best example we have of the methods and fruits of an education, mainly scientific. The transformation which the average student of a good medical school undergoes in three years is strong testimony to the efficiency of the training which he receives.

It speaks volumes for the force of medical practice that out of such raw material there could be produced in the course of a few years so fair a proportion of skillful, humane and successful practitioners. We have here a demonstration that medical study, contrary to the too common opinion, is, to a man of ordinary intelligence and conscientiousness, refining, developing and uplifting.

There is no line between culture subjects and professional subjects. There is absolutely no line. I read the other day an admirable definition by President Hadley of what we wanted the college to effect, not the professional school—presumably Yale College. He said we wanted to teach the college youth civic duty and religious earnestness, and health of mind and religious aspiration; he wanted to teach him public service as the root of American life and therefore of American education. Now, that is true as gospel, gentlemen. It is the educational gospel. But, in my judgment, it is not the gospel of the American college only, it is the gospel of American education from the primary school through the professional school, and I know of no subject better adapted to develop the sense of civic duty, of public service, and of moral and religious earnestness, than the subjects taught in the medical school.

Shall we not agree with these significant and emphatic expressions from one of the greatest educators of our time? And if we do so agree, can there be any possible doubt of the propriety of including the fundamental medical sciences in the university curriculum and counting credits for work therein on the course for a baccalaureate degree? So far from degrading, does not such a procedure enlarge the possibilities of the course and enhance the significance of such a degree?

HAS IT DEGRADED THE DEGREE OF M.D.?

Has the combined course operated to degrade the degree of M.D. and to lessen its significance in the United States? Up to five or six years ago no medical college in this country, with one exception, required more than a high school diploma for admission—most of them admitted students with considerably less than this. The exaction of two years of college work, the minimum demand of the combined course, was therefore a marked advance on previous standards. Moreover, it appears to have been the step which has brought about a general advance in admission requirements. For nearly twenty years we have had in this country a medical school whose minimum requirement is the possession of a bachelor's degree. Its high standards and distinguished service have been a source of great pride and satisfaction to the American medical profession. Such an institution was needed at the time of its foundation—but we have needed perhaps far more, a general uplift all along the line—an elevation of the character and the standards—especially of admission—of all medical schools. No material progress was made toward such an increase until the proposition to require one or two years of college work (not four) was made a few years ago. How gratifyingly rapid has been the upward movement since that time is shown by the last report of the Council on Medical Education of the American Medical Association. About sixty medical colleges have announced their intention to require at least one year of college work by the autumn of 1910; over thirty of these colleges will require two years; the state boards of medical examiners in at least two states no longer recognize the diplomas of medical students who do not take two years of premedical college work, and four others are soon to exact at least one year of such work. Emphatically, the combined course has not degraded but has distinctly elevated the degree of doctor in medicine as conferred in the United States.

WORLD-WIDE UNIFORMITY OF STANDARDS

It has been urged by some that we should seek in this country such standards as would make the degree of M.D., as conferred in the United States, uniform with that given throughout the world. It is to be said of this suggestion that it is impracticable, indeed impossible, because there is no uniformity of standard in the other parts of the world. A glance at the report of the Council on Medical Education, in which the facts in regard to this matter have been very fully and very clearly set forth will show that the degree of M.D. means one thing in Great Britain, another thing in France, yet a different thing in Italy, and still another in Germany, while in the Scandinavian countries it means a more prolonged period of systematic college work than anywhere else in the world. Of these several standards it is likely that a considerable majority of the medical profession of America would regard the medical standards and curriculum of Germany as approaching most nearly the ideal to which we in this country should seek to conform. Opinions differ somewhat as to just what, in our American school system, the German gymnasium most nearly approximates. It has been declared, by some, that the completion of the course in the German gymnasium means no more than the diploma from our better high schools. By others it is regarded as about the equivalent of a baccalaureate degree from an American college. The correct opinion probably, and that held by the majority of educators, is midway between these two estimates; it holds the gymnasium certificate to be about equivalent to the completion of the sophomore year of the better American university or college. If this be the case, the combined course of six years, leading to the degree of B.S. and M.D., with the additional year of interne service now sought and secured by a large number of medical graduates, approximates

V 19

closely indeed to the German plan. This fifth or interne year is shortly to be made, in at least one institution, a prerequisite for the degree of M.D.

ARE TWO DEGREES DESIRABLE, SUCH AS M.B. AND M.D.?

Again it has been argued that if we are to admit students to the medical school with only two years of college credit, while many others present a baccalaureate degree, then some distinction should be made between these two groups in the kind of medical degree conferred. It has been suggested, for example, that the degree of M.B. be conferred on those students not possessing an A.B., B.S. or corresponding degree, before entering the medical school, reserving the degree of M.D. for those students who were college graduates before taking up the study of medicine. This would make the degree of M.D. a secondary or higher degree corresponding to the master's degree, and, some apparently have thought it might even come to have the significance of a Ph.D. It is a serious objection to such a plan that it would involve the amendment of the medical practice acts in many states in which the possession of the degree of M.D. is made an essential prerequisite for licensure. Under this arrangement, these two medical degrees would not be at all equivalent to the corresponding degrees in vogue in Great Britain and some of her colonies. Moreover, the degree of M.D. could never come to have a significance corresponding to that of a master's degree or to the degree of Ph.D., unless the requirements were made equally rigid. Is it not far better that the college graduate who enters the university medical school should find it possible to secure one or both of these higher academic honors, the M.S. or Ph.D., and should he not be encouraged so to do by accomplishing "masterly" or "doctorate" work in one of the medical sciences? The regulations governing these higher degrees should be in no wise relaxed, and they make it impossible for any medical student to secure them by the mere perfunctory accomplishment of the regular medical curriculum. By prolonging his residence, however, one or two years, doing creditable research in one of the medical sciences and presenting the results of his investigation in an acceptable thesis, he has the opportunity to secure this higher academic distinction (with the superior training and power for which it stands), by special research in anatomy, physiology, bacteriology, or any other of the sciences fundamental to medicine.

THE DEGREES OF M.S. OR PH.D. FOR WORK IN THE MEDICAL SCIENCES

That such accomplishment is entirely practicable in connection with and by extension of the regular medical courses in the university has already been demonstrated in at least one university, where, in the last decade ten or twelve students in the medical department have secured the degree of Ph.D., and several others the master's degree. The gain to these students in power and prestige and the gain to the medical profession which they enter can hardly be overestimated. Will it not be a distinct advantage to science, as well as to medicine, when investigative work, of the right sort, in even the clinical branches of medicine, is generally recognized as worthy of credit in the course for a Ph.D. degree, and the real unity of the applied medical sciences with the pure medical sciences is thus emphasized?

THE BEST PREPARATION FOR MEDICAL STUDY

Does the two years of college premedical work demanded by the combined course afford the best preparation for the study of medicine? What is the best preparation? Is there an ideal uniform preparation for all students?

These questions naturally suggest themselves in this connection, and it can not be too strongly emphasized that the four years of high school plus two years of college work comprises not by any means an ideal, but simply the very minimum of preparation with which any young man can afford to take up the study of medicine under existing conditions. The absolute essentials, including physics, chemistry, biology and German, now regarded as indispensable by most medical educators, can not be covered in less time than this. That fact was clearly demonstrated by the investigation of the committee on college preparatory work, in its report to the Council on Medical Education in 1907. The maximum amount of time which one may devote to such preparatory work is merely a question of age, and is by no means uniform for all. It seems obvious that there is no limit to the amount of education, and of knowledge which one might, with advantage, use in the study and practice of medicine. But the *time* which one may spend in such education and the acquisition of that knowledge is distinctly limited by the necessity of his getting about the ultimate business of his life at a reasonably early age. There are two strong reasons for this—one economic, the fact that he must become a bread-winner, and, one psychologic, the fact that the mental faculties, like the muscular system, begin to "set" and to lose their power of adaptability to new lines of effort at a certain age, usually in the early twenties. It is almost universally agreed that a young man ought to graduate in medicine, to have his hospital training and to be started in the practice of his profession well under the age of thirty. Says an educational authority: "If a young man takes his A.B. at twenty-two, he can hardly hope to begin the practice of his profession before the age of twenty-six. That is quite late enough."

The conviction that, under prevailing conditions, the exaction of the baccalaureate degree for admission to the four years' medical course means for many young men, deferment of entrance into practical life much beyond this period, has been all but universal among educators. To meet this difficulty, it has been proposed (1) to abbreviate the college course leading to the baccalaureate degree to three years and even to two years; or, (2) to combine the collegiate and medical school course by (*a*) giving advanced credit of one year in the medical school to the holder of a bachelor's degree as formerly practiced, or (*b*) to permit the college student to take for his senior collegiate year, the first year in the professional school, after the plan in operation at Wabash College, the University of Illinois and some other institutions; or (c) by combining, in certain universities, the academic and professional courses as has been described in this paper. Those plans which secure four full years of study between the high school or academy and the conferring of the baccalaureate degree are surely much less objectionable than the proposition to curtail the time and work demanded for that degree. All of these combination plans should be permitted, under proper supervision and restrictions. Each has its advantages, and meets best the needs of certain students. No device for curtailing the amount of his preparation should be sought by or advised for the student who can "go the whole road" within the age limit of twenty-seven or twenty-eight, but for a long

time to come a considerable proportion of earnest, capable medical students will be so circumstanced that it will not be to their best interests so to do. Experience has demonstrated that the student who has had only two years of college preparatory work, provided that has included the requisite chemistry, physics, and biology, with German and French, can pursue the medical courses alongside his fellow who has completed the college course without serious handicap. The additional two years of preparation which the latter has enjoyed is much to be desired, but its advantages are more evident in later life. A few medical schools will prefer to exclude all students who have not secured a baccalaureate degree, but the larger service to the community and to the profession is certain to be rendered by most schools if they make the entrance requirements more flexible and adjustable to the needs of a larger number of students.

IS THE COMBINED COURSE UNFAIR TO THE DETACHED COLLEGE?

It is objected by some of the colleges, having no medical departments, that the combined course is unfair to them because it tends to attract their students to the university with its medical school at the end of the sophomore year. Most of the colleges object, also, and with some reason, to the plan mentioned above, which had its origin in one of these colleges, in which a student is permitted to leave the college at the end of his junior year, taking for his senior baccalaureate course, the first year in an approved professional school—law or medicine. The contention is that these plans take the student from the college at the time when the college most desires to have him for its own.

In answer to these objections it is to be said first, that in the practical experience of at least one college, for now some years, these fears have not been realized not a single student has been tempted away by the opportunity thus offered to abbreviate his course. Second, if a few students are thus seduced from the college, there must be set off against these the hundreds of students which the increased requirements for admission to the medical school will bring to them. For a century and more the vast majority of medical students in this country have been passing direct from the common or high school, by the door of the college, into the medical school. The two years of college work now demanded by many, and almost certainly in the near future to be exacted by all medical schools, must turn this procession of students into the college, and if these hundreds of new students are thus secured to the college by the increased requirements—the direct outgrowth of the combined course—may we not reasonably feel that it is the business of the college to keep them: that it should be able to make its work so useful and attractive, and so to convince the student of the advantages of full collegiate training, as to induce him to remain until he attains his baccalaureate degree?

Two things, however, are due the college from the medical school: First, the latter should use its every effort to persuade students preparing for medicine to take the full college course if it is possible for them so to do; second, the medical school should recognize, both in time and subject credit, any and all good work done by the college in the medical branches—chemistry, histology, embryology, etc. At present it is not possible for the medical school to give such time credit. The proscription of this custom by the medical examining boards of several states constitutes one of the most illogical, unjust, unwise and probably illegal regulations which have ever been made in connection with medical education. Illogical, because credit is thus denied for work far superior to that done in the majority of medical schools recognized by these boards; unjust, because the colleges had prepared themselves to teach these subjects in large part at the urgent solicitation of the better medical schools, only to find the promised credit in the medical schools withdrawn just as their students were prepared to ask it; unwise, because it abolished an arrangement which had been one of the most effective agencies in inducing young men to secure college training before taking up medical study. In one of the states in which this obnoxious legislation was first enacted, the board has apparently never been willing to risk its submission to the courts of law. Certainly at least eight or ten graduates in medicine, to the writer's knowledge, who had been granted a year of advanced standing for collegiate work and a baccalaureate degree by the medical school from which they graduated, have settled in this state, have applied for admission to examination for licensure, have been refused, have stated their intention to continue in practice, though ready at any time to take the regular examination, and in every instance these physicians have been subsequently requested to appear for examination, have passed the same and secured the license. Within two years, the attorney-general of this state has rendered an opinion on this obnoxious regulation flatly in opposition to the contention of the board.

Undoubtedly some colleges have attempted the teaching of medical branches which they should not have undertaken at all. Undoubtedly, the holders of a baccalaureate degree from unworthy colleges were in some instances granted advanced standing by medical schools when the medical work done was wholly undeserving of such credit. But the remedy for the abuse of a good custom lies not in the abolition of the custom, but in the correction of the abuse. What the medical examining boards should have done was to have investigated all colleges teaching medical subjects for which their students claimed advanced credit in the medical school. These colleges should then have been classified, as the boards have classified medical schools, into "recognized" and "unrecognized" or "partially recognized." This important question will never be satisfactorily or finally settled until some such plan is adopted.

SHALL THE COLLEGES TEACH MEDICAL SUBJECTS?

What shall the college teach in the fundamental medical branches? No more important question confronts the colleges to-day than this one. I have visited many scores of colleges in the past few years, and everywhere this question was among those that were uppermost in the minds of the faculties. One thing seems certain, and that is that the answer is by no means uniform for all. What subjects each college should include in its curriculum depends on many factors of locality, equipment, resources, the predilections of its teachers, the demand of its students. To settle this point there is needed the most careful deliberation of its faculty, and the advice and cooperation of those engaged in medical education. The college is much more likely to err by attempting to teach too many things than by offering too few. Many excellent colleges are unfitted to teach any medical branches at all, while others, even among the smaller schools, are doing efficient work in such subjects as histology, embryology, physiology, and human anatomy with dis-

section, work, indeed, of far better quality than up to the present has been done by the majority of medical schools. Is it not the height of absurdity to deny recognition for this work because, forsooth, the institution in which it is done has not been christened "medical school"?

The university, with its medical department, possesses, and must continue to possess an advantage over the detached college in respect to the combined course for the baccalaureate and medical degrees, but the college has a right to insist that when its circumstances and resources permit it to give adequate instruction to its students in medical subjects, that work shall receive just and full recognition by the medical school.

SURGICAL PATHOLOGY: ITS SCOPE AND TEACHING

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As the question, "What is surgical pathology?" has so frequently been put to me by the graduates of years past, by several general pathologists to institutions having no such departments connected with their respective colleges, and especially since the question was very recently asked by one of the visiting German pathologists attending the recent convention, I feel that an effort to elucidate this question may not be amiss.

Naturally, this question comprehends the nature of surgical pathology and the reason for making it a special department of pathology or, more properly, of surgery. When we speak of surgical pathology, we refer especially to those portions of pathology which deal with conditions directly amenable to surgical treatment and investigation and which can be studied either *in* the *living* individual or *out* of him while he still *lives*. It naturally deals with the grosser abnormalities, but especially with those parasites of the human body, the tumors, the acute, suppurative and certain of the chronic productive inflammations and the infectious granulomata, such as tuberculosis, syphilis, etc., when directly amenable to surgical treatment. By confining the work to these limitations and endeavoring to correlate the knowledge gained from the microscope with that obtained at operation and from the full knowledge of the patient's history before and after the operation, it endeavors to perfect that knowledge to its finest degree, at the same time making constant effort to increase the scope of its practical benefits.

Leaving the study of the larger difficult and intricate problems of pathology to those trained and skilled pathologists and thinkers who devote to it their entire time without any of the diversions of practice in the busy medical world, those who make surgical pathology their sole objective feel that they are better equipped to comprehend and make use of whatever knowledge of practical value may be derived from this study than those who see but one side of the subject and never come in contact with living, suffering or cured patients. Their knowledge of the symptoms which have directed their attention to this tumor or that inflammatory process, coupled with that which they have seen or should see at the operation, gives them better opportunity to place the proper interpretation of that found in the laboratory and learned from the microscope. Their knowledge of the later progress of the case (and on that the surgeon should always make it his object to keep them informed), coupled with the knowledge of what is found on the operation table, should better fit them to direct their investigations in such a manner as to strengthen the weak points in the operative technic, if there be any, and lead them to interpret better, for the surgeon or for themselves, the limitations and meanings of the gross morbid pathology found under the eye in the living body.

From the standpoint of surgery, the branch should be divorced from the general teaching in surgery, because of the well-known fact that there are few, if any, surgeons with their numerous operations, many hours of teaching and the weighty responsibilities, who would have the time and patience required of him who would do laboratory work in pathology. The proper effort in this line requires not only that he shall keep well in touch with the latest and best surgical knowledge, but that he shall also keep in touch with that immense and progressive field of general pathology which every day, by means of its advanced experimental knowledge, is commanding further attention in all lines of medical work. He must keep himself informed on both sides of the question so as quickly to be alive to the possibilities of applying the one to the other with the best result for the patient.

From the standpoint of the student, there are many reasons why this branch should be taught separately by those especially equipped for the work. In the earlier years of his student career there are many fundamental branches crowded into his head, the practical use for which he can not conceive, and in which his interest is lacking. Among these branches is pathology, although it may possibly excel the others from the standpoint of interest to the student, because then he commences to feel that he is at least dealing with the abnormal, which alone he considers essential. The subject is so tremendous in its scope that the time allotted to its teaching, while often great, is rarely sufficient to cover it completely even from the standpoint of the pathologist and the morbid anatomist. Therefore, it is more than can be expected of any teacher who wishes to keep himself well informed on all the latest advanced pathologic discoveries, in order to present them in an acceptable but not too intricate a manner to the student, and at the same time contribute his mite to the general progress of the science, that he should keep abreast of the latest advances of surgery and present to the student the practical applications of the subjects he is called on to teach. The reverse of the proposition applies to the surgeon.

Again, allowing the possibility of one man being able to control the literature and his time so that he would be able to teach his pathology and at the same time give all the practical applications of this knowledge, would the student, as yet in his early years, be prepared properly to grasp this knowledge and to retain it until such time when he will need it most; that is, after his student days are over? As the matter stands at present, I believe that not many will contradict the statement that there are few students who, in their serious efforts to wrestle with and comprehend the more intricate problems in pathology, such as immunity, etc., do not relegate to the background the simpler problems of microscopic diagnosis and the gross general characteristics of certain morbid growths and processes. After leaving the more elementary subjects, they plunge head-

long into clinics and operative surgery, receive lectures on lectures on symptoms and diagnosis, with little stress on the gross pathology and none on the microscopic pathology. This is partly because it is presumed that that knowledge on the subject has already been imparted to the students and that they are, therefore, familiar with it. At times it may possibly be because the active surgeon has acquired, by long experience, that intuition in surgical diagnosis and interpretation which unconsciously results from and finally supplants that pathologic knowledge which he formerly had, but which has become somewhat hazy with the mist of time.

These are conditions which are perfectly natural and to be expected, but nevertheless not to be desired. The student mind, immature in medical conceptions, is unable properly to grasp and to correlate these two great and useful subjects and thereby acquire with the material already at hand and at his disposal that knowledge which has taken many of his predecessors years to acquire through varied and often bitter experiences and sad mistakes. It is this training in the correlation of the great subjects of pathology and physiology with medicine and surgery which has developed the vast majority of our world-renowned diagnosticians, surgeons and clinicians. It is not the art of surgery which has accomplished the greatest wonders, but it is the science of accurate diagnosis and interpretation which has raised surgery to the high pinnacle of to-day.

It is this breach in the teaching of the medical schools that surgical pathology tries to fill. There is much that it does do and still more that it might try to do, but one object it certainly endeavors to attain, and, if that is accomplished, the failures may be considered as atoned for. It endeavors to teach the student never to think of any one phase of the subject to the exclusion of the others, but continually to correlate his knowledge of anatomy, physiology and pathology and to make it applicable to the subject at hand. It endeavors to show that symptoms are merely effects which must follow definite underlying pathologic, physiologic or anatomic derangements and that clear and comprehensive understanding of the conditions to be dealt with necessarily means a clear conception of the gross or minute processes which are occurring beneath the superficial coverings of the skin and tissues. It endeavors to develop in the student "the microscopic eye" so that when he is called on to study a case he may quickly call to mind the possible morbid processes with which he may be dealing and the necessary morbid effects that they would produce and, by exclusion, arrive at an accurate diagnosis with its proper and scientific treatment.

As to the practical methods used to carry out these ideals, they may be many and varied. That which appeals most to me and which I have endeavored to carry out as far as possible is somewhat along the following lines. First, there should be a close and definite relationship between the departments of surgery and surgical pathology so that those in the department of surgical pathology shall have the freest access to all the surgical cases, on whatever service they may be, in order that they may be fully informed as to the history and progress of every operative case within the hospital. They should be informed in advance of every operation to be performed and as far as possible should participate in the operation so as to have that intimate knowledge of the conditions which comes only with sight and touch, at close quarters. Every specimen removed from the living body, no matter how trivial or unimportant it may appear grossly, should be sent, either immediately in the fresh state or carefully preserved in whatever form of preservation may best suit the laboratory chief, to the laboratory for examination. Every single specimen should be carefully and accurately labeled, and with each specimen should be sent a slip, giving all the important data pertaining to the case. Preferably, it should be accompanied by a copy of the full history. These histories should be filed away and indexed so as to be immediately available to any one studying the specimen.

When specimens are received in the laboratory, they should be immediately carefully described, photographed when possible or drawn if of sufficient value; then a section removed for microscopic examination and the remainder prepared by Kaiserling or other method for permanent mount. The histories, with photographs, negatives and pathologic reports, should be filed away in large envelopes so that at a moment's notice all the available data may be at hand for a careful study of the case as a whole. For the same reason all the specimens in the laboratory should be cross-catalogued in three different manners, viz.: according to the name of the patient, according to the organ or region affected, and according to the nature of the affection. Choice typical specimens should be sectioned, stained and mounted for class laboratory work, and at times it may be of advantage to teach from specimens which are not typical if thereby some point in diagnosis may be more forcibly brought to the front. At this period in the course I do not think it fair to the student to require him to spend valuable time sectioning and staining specimens; I believe that his time should be devoted to more careful study of them with a view toward the practical application of his knowledge in the wider subjects of surgery. As many of the specimens, while valuable from the teaching standpoint, are not always available when desired, and since but a very small minority of the students ever look at their slides again after leaving college, it has not been my practice to give these slides to the students, but to use them year after year until they are destroyed by breakage, etc. Usually there will be sufficient of the specimen so that slides may be presented to a few of the more interested of the students should they desire them. The classes can easily be handled if the student be given an individual tray accommodating five or more different slides for the day's study. So much for the conduct of the laboratory and the preparation for the course.

The course itself should be placed as near to the end of the college curriculum as is possible, so that it may go hand in hand with the advanced teaching in surgery and at the same time better prepare the outgoing student to take up his work in hospitals, army, navy or other advanced training ground. It should consist of both lectures and laboratory work. The lectures should be illustrated by lantern slides, by patients, specimens and illustrations whenever possible, in order to treat thoroughly the theoretical portion of the subject and in order to assemble all the essential facts from the correlated branches in so far as they are related to the subject in hand. The laboratory work is intended for a careful study of microscopic slides illustrating the various phases of the affection just lectured on. The laboratory work should be made to coincide as much as possible with the lectures so that the full force of whatever may be taught can be realized at the same time. This

work can be further helped by making this course coincide, when possible, with the lectures on surgery.

The subjects to be taught and the order and manner in which they shall be approached are matters on which all may differ and still attain good results. I have found the old method followed in the teaching of surgery, according to systems, very satisfactory and see no reason to change. I usually begin by considering the fundamental essential for surgery, namely, regeneration and repair in the various character of tissues; then I take up the diseases of the skeletal system, the surgical affections of the gastrointestinal system from the lips to the anus, including the gall bladder and pancreas, the thyroid gland, the genital system in male and female, including the breast, the surgical affections of the urinary system and, finally, the lymph system and miscellaneous conditions, as skin tumors, etc.

In treating all these subjects, whenever time will permit, a very hurried survey is first made of the anatomy, histology and physiology of the organ or region to be studied in order that the student may have at hand all the data necessary for the proper application of his pathologic knowledge to the study of the living patient. The pathology of the condition and the latest experimental findings are then gone into as carefully as possible with especial stress on their relationship to other organs and the region affected when such relationship exists. Methods of transference of conditions with routes, whenever traceable, are studied in detail, as in the case of metastasis of tumors, etc. Symptoms and recognized methods of treatment are touched on only when there is a pathologic lesson to be derived or when their own origin is easily and distinctly traceable to some plainly demonstrable macroscopic or microscopic pathologic condition. In other words, the student's attention is called to symptoms only when necessary to show how clearly dependent they are on abnormalities of structure, causing abnormalities in physiologic function. He is not required to know them as forming a clinical entity, but whenever possible an effort is made to make it easy for him to conjecture as to their presence from a simple process of deductive reasoning. The whole subject is then clinched by a couple of hours spent in the laboratory studying microscopic and gross specimens covering the subject considered.

This I submit as my answer to the query, "What is surgical pathology?" The subject as a distinct specialty is comparatively young, and courses in the various colleges are of very recent date. We feel that with proper encouragement both by students and co-educators much good can be accomplished for the student, his burdens made lighter instead of increased, his mental attitude toward medical subjects broadened, and at the same time there will develop a set of men trained in experimental surgery and pathology, well equipped to take up the burdens when time shall rob us of the masters of to-day.

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Carbohydrates in Diabetes.—I. V. Lemann, in the *New Orleans Medical and Surgical Journal*, April, states that each case demands separate study, because cases differ not only in grade but in kind also. The tolerance of patients to various carbohydrates is different. Various complications call for alterations in diet, and unless the physician is prepared to give intelligent attention to these details he can not hope for good results from the diet he prescribes for his diabetic patients.

CANCER OF THE BREAST

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In the present contribution, I shall refer only incidentally to statistics. In several previously published papers[1] I have given my statistics at length. I desire now to express some opinions that I have formed and facts that I have collected from a study of my own personal cases during the past twenty-five years, selecting a few cases of cancer of the breast, and analyzing them critically, because I believe it is a better way to arrive at the truth, than by a promiscuous study of a large number of cases with statistics only as a guide to determine certain important facts.

I intend to consider very briefly some salient facts in regard to the final outcome of thirty-nine cases of cancer of the breast, the histories of which I know from the time of the operation to the present day. These thirty-nine cases have been selected from a large number solely for the reason that I have a personal knowledge of each case from the incipiency of the disease to the present moment. All these patients have lived beyond the three years' limit of time. One patient has lived twenty-five years, another nineteen years, another seventeen years, and another fifteen years, and the rest from three to fourteen years with no return of the disease. In this list one was eighty-five years and another eighty-two years old. I mention these two cases to illustrate the fact that age itself appears to offer no barrier to an operation for the relief of cancer of the breast.

I am convinced that a study of the cure of cancer of the breast from a percentage point of view only has created a very false impression among surgeons and a depressing effect on the laity. The all-important question for the surgeon and the patient is this: Can a permanent cure be effected if the operation is undertaken early, and radical in character? If this view can be substantiated it will create hope in the patient, and inspire courage in the surgeon.

The clinical picture of cancer of the breast has been so drawn in past years as to create a most unfavorable impression. The early and radical operation is certain to efface this gloomy picture, and to draw in its place one that will inspire hope in the unfortunate victims of the disease. The safety of the operation is a subject worthy of consideration. In all of the operations which I have mentioned, and an accurate knowledge of which I possess, there has not been a death except in two cases of hemophilia, and such deaths are not peculiar to this special operation, but would occur in connection with any other major operation. The mortality therefore, in several hundred cases would be almost nothing, even if these cases were included, and absolutely nothing if they were excluded. The percentage of permanent cures, on the other hand, can not be so correctly estimated because so many cases are lost sight of and therefore can not furnish data for statistical purposes. In a recent small series of cases extending over three years from the time of the operation the percentage of permanent cures amounted to 77 per cent. In a previous series the percentage was 45 per cent., but these operations were done earlier in the history of what is called the complete operation. The sum total of percentages of cure therefore, would fall below the high figure previously mentioned, and above the lower figure stated in the second series. These facts certainly en-

1. Tr. Am. Surg. Assn.

courage the surgeon to hope for even better results, and as we learn more about the disease and still further improve the technic of the present operation, the future holds out even greater encouragement for more brilliant results in the cure of a disease, which in former years baffled the skill of the greatest surgeons of the day.

PERMANENT CURE

The permanent cure of cancer of the breast is a subject in which the surgeon as well as the patient take the greatest interest. All other subjects, such as etiology, diagnosis, operation, and the like, are insignificant to the patient as compared with that of the permanent cure.

What constitutes a permanent cure? Authorities differ on this question. No one is willing to admit a less time than three years as decisive. Recently some surgeons have placed the limit of time as five years. In some of my cases ten to eighteen, and even twenty-five years have elapsed with no return of the disease.

The percentage of returns after three years is so insignificant that it would seem wise for surgeons to accept this standard, not only for the encouragement of the patient, which is no small fact in the management of the disease, but because it establishes a fixed standard from which the case from an operative as well as an optimistic point of view can be judged.

ADVISABILITY OF OPERATION IN ADVANCED CASES

There is much diversity of opinion on this question. From my own experience I feel certain that it is a wise course to operate unless the mediastinal glands are involved, or unless there is visceral metastasis, or the growth is adherent to the chest wall. I have been astonished at some results after operation, in cases in which I felt absolutely certain a return and death would follow in a few months. Yet these patients have recovered and have remained free from the disease for years, and thus have demonstrated the error of a too conservative view held by the profession at large.

In some cases in which the outlook was most unfavorable, as manifested by extensive ulceration, hemorrhage, wide-spread axillary involvement, the final results have been entirely satisfactory. No better proof of this statement can be made than by a brief reference to three cases occurring in the list of thirty-nine cases of cancer of the breast. It seems pertinent to call attention to these three cases because they demonstrate the possibility of a cure when everything looked hopeless. I admit that we can not place much reliance on a cure when cases present such a chain of unfavorable symptoms. It only shows that surgeons should not withhold an operation from the patient, even when the outlook is most discouraging. The patients should have the benefit of the doubt; it is always best, however, to explain to the friends the situation, and then they will not be too greatly disappointed if the operation is attended with a quickly fatal result.

The first patient had a foul, ulcerating, hemorrhagic, and fungous breast, with axillary enlargement. I advised the operation, not with the expectation of curing the disease, but purely from an humanitarian point of view. I felt sure that the hemorrhages could in a measure be controlled, the offensive smell to a greater or less extent be removed, the constant pain, at least for a while, be relieved, and the patient be made more comfortable during the few months she lived. To my surprise after nine years this patient has been free from the disease, and to all intents and purposes is at the present time in perfect health. The operation was radical as the circumstances permitted, and I am at loss to explain the cure under these unfavorable conditions.

The second patient was the victim of a fungous, hemorrhagic foul-smelling carcinoma of the breast. I hesitated to operate at all, but did so at the request of the husband, with a full understanding that the operation was one to palliate the distressing symptoms, and with no expectation of cure. This operation was performed five years ago, and only recently the patient died from an acute disease, with no evidence of any return of the cancer.

Both of these tumors were examined by microscopists of world-wide reputation, who pronounced them carcinoma. I merely mention these two cases in the list of thirty-nine to illustrate the fact that sometimes recovery takes place in the most hopeless cases. Such instances appear to me to urge the surgeon to operate in the most desperate cases, with the most forlorn prognosis, unless, as previously indicated, there is involvement of the mediastinal glands, or visceral metastasis, or adhesion of the growth to the chest wall. I can offer no explanation as to the behavior of these two tumors, but they both seem worthy of record as evidence that our knowledge is still incomplete in regard to the course of certain types of cancer of the breast.

The third case is one in which I had operated nearly ten years ago and later a metastasis occurred in the lung with an extensive hemothorax. By aspiration a very large quantity of bloody fluid was withdrawn to relieve a severe dyspnea. To my utter astonishment, this patient, after the paracentesis, began immediately to improve from an almost bed-ridden condition, and for many years was in fairly good health and was in the habit of coming to my office from a distance for two or three years. From a study of these cases, bearing on the subject of permanent cures, I have been impressed with the fact that the histologic formation of the tumor influences in a marked degree the question of permanent cures. For example, I have found that the tumors which show structures departing but slightly from the normal, correspond in nearly every case with the group of cases, the clinical histories of which were favorable, because in these cases no return of the carcinoma occurred. The tumors that showed a great departure from the normal structure occurred in the cases with unfavorable clinical histories. The more typical the structure, therefore, the more favorable the prognosis; the more atypical, the more unfavorable the prognosis. In other words, epithelioma develops by asexual cell proliferation; the more embryonic the cell is, the more malignant the growth; and the nearer the cell approaches the normal, the less malignant the growth.

CONDITIONS REQUIRED FOR COMPLETE RECOVERY

The early and radical operation is of paramount importance, since the facts I have already mentioned clearly demonstrate the value of this rule. The early operation is indicated because glandular infection is not likely to be present, and the patient is in better physical health, from absence of worry and pain. This fact should impress the family physician with the responsibility of referring his patient early to a surgeon, who then must assume the responsibility of this important question. No growth in the breast, however small, should be disregarded, especially if the patient is ap-

proaching the menopause. It is by a view to prophylaxis that the mortality of death from cancer of the breast is to be still further reduced.

The more radical the operation, within reasonable limits, the better the prognosis. It seems unnecessary and a loss of time to discuss this point, since it is universally admitted that the more radical the operation, the less likely it is that the disease will return. The difficulty seems to be as to what constitutes a radical operation. Surgeons agree that all skin over the infected area should be sacrificed. The breast, with Sir Astley Cooper's ligaments, should be entirely removed, the pectoral fascia and muscles should be excised, the axillary glands, the perimammary and retromammary fat, likewise the paramammary areolar tissue should be dissected out as the minimum operation. If the cancer involves the ribs, perforates the thoracic wall, and has already infected the mediastinal glands, no operation, however radical, would be attended with any success. The same rule may also apply to that form of cancer termed *en cuirasse*, or *en plaques*, or acute miliary carcinosis. I am firmly convinced that any radical operation, more than has been described, will be of no avail. The element of time should be seriously considered, since the performance of any operation which requires the patient to be under an anesthetic for four or five hours, is attended with a risk, which if possible should be obviated. These prolonged operations are sometimes followed by ether pneumonia, acute sepsis, profound shock, suppression of urine, and many other like conditions, which jeopardize the life of the patient. In other words, we must not lose sight of some of the general principles connected with surgery, at the expense of the elaboration of an operation, the performance of which eliminates some of the best precepts and practices of our art.

In most of my cases in which no return has ever occurred, even though twenty-five years have elapsed since the operation, the patients, almost without exception, were operated on within six months from the first appearance of the disease. This point seems to me of the greatest importance in relation to the prognosis, and without question the earlier the operation the more certain it is that a permanent cure can be effected. At this point naturally the question arises as to a certainty of diagnosis within six months. I admit that it is often difficult to determine with absolute certainty that any small nodule in the breast is carcinomatous. The obstacle presented by the theory that a correct diagnosis of carcinoma within six months is a *sine qua non* for operative interference has been removed in my own mind, by a rule that all nodules or tumors in a breast in a woman at the time of or near to, or after the menopause, especially with a depressed nipple and skin dimpling, should be removed by a complete ablation of the breast. The risk run is too great if surgical interference is deferred until the diagnosis is made certain.

In several cases during the past few years I have adopted this procedure, and to my surprise the microscopic report has been returned with the diagnosis of incipient epithelioma. In such cases the patients do well as they are taken early in the course of the disease, and the nodule is small and surrounded by healthy glandular tissue. In the hands of a good surgeon with aseptic environment the risk of removing the breast is so slight that it may almost be disregarded as a factor in determining the question of an operation.

A point still further to consider is that in a large majority of cases in which a nodule or tumor is felt, it is almost certain in time to become malignant, if it has not already begun to undergo malignant degeneration. This same law of early surgical interference holds good in case of tuberculous induration, in syphilitic ulceration, in actinomycosis, or in other infective processes.

The question is more difficult when the patient is a young woman, and the growth is adenomatous. Such cases are more difficult to manage; but I am still of the opinion that all adenomata in the young should be removed, and in the case of very young girls only the nodule itself excised and examined, and if then found to be undergoing epitheliomatous changes, the entire breast should be removed by a radical operation. In the case of young girls or young women, the breast can be raised by a flap with an incision under the breast and in its fold, and turned on the thoracic wall, and the adenoma attacked from the posterior surface of the gland. After excision of the adenoma the breast can be turned down and sutured with the scar completely hid from view. I have done this and preserved the symmetry of the breast; and I have record of cases of this kind in which the breast subsequently performed its function of lactation.

In cases of chronic mastitis in a woman over forty, if pain is a constant factor, and the interstitial induration is marked, the breast should be removed to prevent the possibility of malignant degenerative changes. Within a few weeks I removed a breast for painful mastitis, and Dr. Norris reports that beginning epithelioma is present.

THE MANAGEMENT OF CASES THAT DO NOT ADMIT OPERATION

These are the cases that tax the surgeon's skill, and cause severe suffering to the patient. Nothing is more distressing to the surgeon and painful to the patient than to watch the progress of a fatal disease with the full knowledge of the condition—both waiting, utterly helpless, until the end comes, and death closes the scene.

In such cases the surgeon's duty is to mitigate the suffering, and to make the patient as comfortable as possible with a view to euthanasia. The different methods of treatment of cancer of the breast, in cases in which no operation is possible, can be discussed very briefly. The *x*-ray is one of the methods now in vogue. One writer has reported a dozen cases of cancer of the breast in which cures were effected by the *x*-ray. The absence of a microscopic examination of any of the tumors, and the fact that not a single case in the list had yet reached the three years' limit of time make these cases valueless as a basis on which to study results.

The *x*-ray is a force that should not be employed by one who is not an expert in its use, because its employment even by the best men has been followed by violent dermatitis, by ulcers that fail to heal, and that finally became the starting point of epithelioma. In a recent article by Pusey, some interesting clinical facts have been brought out in connection with the *x*-ray, which are worthy of mention. He thinks that the *x*-ray is not suitable for cases of carcinoma in which the adjacent lymph nodes are involved. It is also futile in cancer of the neck, or of the viscera. In recurrent carcinoma of the breast, alleviation of suffering for a few months has followed the *x*-ray treatment, but no cures have

followed a year's test. In primary carcinoma of the breast I fail to find an authentic case which has been permanently cured; but if for any reason no operation can be performed, the *x*-ray is worthy of trial on account of the possibility of alleviation of suffering.

Radium is a new therapeutic measure, the value of which is unknown. This is conceded even by those who have used it most extensively in the treatment of malignant disease. It is a force that is most powerful, and the permanency of the cures claimed by its advocates is not yet determined.

It is only fair to say that I do not wish to place myself on record as depreciating in any way the use of radium, or any of these agencies. I only contend that they have their limited use in certain varieties of malignant ulcers, and that in no case should they take the place of surgical procedure, except in cases unsuitable for operation.

The important clinical fact must not be lost sight of, that in nearly all cases, like those of reported permanent cures by the *x*-ray, or those cases of reported cure by radium, a microscopic examination is wanting to prove the diagnosis correct. In certain superficial epithelial ulcers radium has effected a cure.

The serum treatment of cancer of the breast has not yet yielded any satisfactory results. As far as I can ascertain from the best authorities, no cures have been accomplished by serum injection in cases of cancer of the breast.

In a recent communication, Dr. Clowes of the State Cancer Laboratory states that so far as he is aware "no results have ever been published from strictly scientific institutions regarding successful treatment of cancer of the breast by means of serum. We have ourselves experimented in the past with horse serum, and the serum of dogs and goats, after the animals in question had been treated with repeated doses of cancer material.

"The results have been negative, although in one case the development of the tumor was unquestionably delayed for some time, but if anything grew more rapidly than would have otherwise been the case towards the end. Even were a case of successful treatment reported in the literature, in which pathologic examination excluded error of diagnosis, I should still feel inclined to consider it one of spontaneous recovery."

The serum treatment of cancer of the breast must still be held *subjudice*. It has failed to cure cancer in any form, but it has succeeded in the hands of some surgeons in effecting a cure in certain varieties of sarcoma.

The surgeon is utterly powerless to treat cancer of the breast by other means than operation until our scientific laboratories discover whether cancer is a metabolic or a parasitic disease. When this great discovery has been made, the treatment of cases of cancer in which operation is not possible will in all probability be accomplished.

The employment of drugs for the relief of pain is indicated in cases of inoperable cancer of the breast, and these remedies should be used in sufficient doses to accomplish the object. The management of cases of cancer of the breast in which operation is not admissible should engage our study, and it is to be hoped that before long some remedy will be forthcoming that will cure this disease when it has advanced beyond the stage at which it is curable by operation.

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CANCER OF THE BREAST

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PHILADELPHIA

It is manifest that only a few of the more important and fairly well-demonstrated features of carcinoma can claim our consideration. It would be profitless to wander into the attractive yet elusive field of the etiology of carcinoma in general. While much has been written during the past year tending to show the parasitic origin of cancer, I am still of the opinion, as I have ever been, that the arguments of those who can see nothing in carcinoma but a germ disease are, to say the least, inconclusive. Attractive as this subject is and as much as I should like to discuss it, there are other features of cancer about which there is less ground for speculation and concerning which a discussion on this occasion is both more apposite and germane. We, as practitioners of medicine and surgery can safely leave this most important, yet unsolved, problem in the hands of laboratory experts, feeling hopeful if not entirely confident that convincing proof may ere long be forthcoming.

More will be gained at this time by insisting on that which is, and has long been, definitely known to operating surgeons, but is yet hardly appreciated by practitioners, who, as a rule, first see patients with mammary cancer and are consulted for advice. The fate of these unfortunate victims of cancer is largely in the keeping of the family physician, and he can not escape the responsibility; to show the importance of this fact is, I conceive it, the first duty incumbent on me. An early diagnosis, when the disease is strictly local, makes an operative cure not only possible, but highly probable, whereas a tardy recognition of mammary carcinoma can not be atoned for by the most extensive and brilliant operative procedure. Patients too long neglected are doomed to a lingering, loathsome and painful death simply because the disease is no longer local, but has become general. That the transition from a local, discrete and entirely operable condition, to a general, disseminated and inoperable one may take place quickly, is demonstrated by the most elementary anatomic and pathologic investigation. Cancer begins as an undue proliferation of the epithelial cells of the mamma and continues to be a strictly local neoplasm and therefore easily and completely removable if attacked before metastases have occurred in the neighboring or distant lymphatic glands and viscera. I shall show that early operation will cure 80 per cent. of all cases without glandular involvement, and also demonstrate as conclusively that infection of even the nearest lymphatic nodes—the axillary—permits an abiding result in only 25 per cent. of such cases. Need more be said to those who continue to hold pessimistic opinions, the offspring of the false teachings of a past era? If the profession could be made first, to realize, and second, to teach the laity that mammary growths are usually malignant and should be considered and treated as such until their benignity is proven, the operative results would be far better than they are. As it is, they are much better than is generally appreciated, and, notwithstanding the many inexcusable blunders in diagnosis, and the more frequent belated reference of such cases to surgeons, one-third of such patients at the very least are permanently cured. Until we can say that at least two

third or three-fourths of breast cancers are cured by operation, and prove it by incontrovertible statistics, both physicians and surgeons are carrying a heavy, indeed, a grievous responsibility—the former because they do not demand early, and the latter because they do not perform a complete operation. The remaining 25 per cent. of patients will necessarily be doomed on account of the treacherous nature of the affection, which has passed from a local to a more or less disseminated process before its host sought medical advice. If the disease were only as painful in its first as it is in its last stages, then a much larger number of patients would seek early relief. But the fact is as I have stated it, and I emphasize and accentuate it simply for the reason that all of the laity and nearly all of the profession consider a non-painful tumor benign. I shall show that pain in cancer is a late symptom and depends almost entirely on either adhesions or ulcerations, and when present to a pronounced extent, admonishes the operator that the case has likely passed the propitious time for surgery. The exceptions are so few as practically to constitute a negligible quantity. Hence, better results, if they are to be forthcoming, can only follow an early diagnosis; and I shall try to show that it can usually be made by the general practitioner (91 per cent. of cases), and that in the small percentage (9 per cent.) in which it can not be recognized by its objective and subjective symptoms, there is both a certain and a conservative way of making the diagnosis.

The three most important things to consider when a tumor of the breast is under consideration are; first, age of the patient; second, location of the growth; third, whether or not it is adherent to the surrounding parts.

AGE OF THE PATIENT

Formerly age was considered to be of the first and greatest importance in differentiating mammary neoplasms. It was thought that carcinoma rarely affected women less than forty years of age. While it is undeniably more common after than before forty, still there are enough cases in young women to discredit any diagnosis based on age alone. I analyzed carefully the statistics of 5,000 cases with reference to age incidence, reporting the same in my book on the breast,[1] showing that 20.5 per cent., or one-fifth of all cases occur in women under forty. Of these, 9 per cent. were between 20 and 30, and 11.5 per cent. between 30 and 40. It is unquestionably true that cancer in all parts of the body is more frequent now than formerly, that races hitherto immune (African and North American Indian) are frequently affected, and that barriers other than racial are being broken down in its encroachments. The youngest patient reported by S. W. Gross was 28 years of age. I have operated on five patients under 30 years of age—23, 25, 25, 27, 28 respectively. The late A. J. McCosh reported to me in a private communication a patient 19 years of age, M. Richardson one aged 21, and Park and Warren one each aged 22. Almost an equal number of cases occur in the two decades between 40 and 60—26 per cent. in women between 40 and 50, and 27.5 per cent. between 50 and 60. After 60 there is a sharp decline in the number of cases.

Therefore, the period of greatest liability is about and after the climacteric, when the gland is undergoing functional decline and its epithelial elements are prone to proliferate unduly. This should be kept constantly before us because an involution mastitis, the condition most difficult to differentiate from carcinoma, is also likely to occur about the menopause. The probable painfulness of mastitis and the varying amount of swelling it causes are always suggestive of an inflammatory process.

SITE OF GROWTH

Perhaps of greater importance than the age of the patient will be the site of the tumor. While cancer may, and does at times, affect all parts of the breast, it is more frequently found in the axillary hemisphere than in the sternal half of the gland; and of the two outer quadrants, the upper is more frequently involved than the lower. Next in point of frequency, the middle portion of the gland—that directly behind the areola—will be involved. It is the latter variety of tumors that by their adhesions to neighboring structures pull on and cause retraction of the nipple. Benign tumors and sarcoma, *per contra*, are both more frequently met in the sternal hemisphere, the upper and inner quadrant particularly.

MOVABILITY OR IMMOVABILITY OF TUMOR

The movability or immovability of a tumor is above all other things its most suggestive and greatest diagnostic characteristic. A tumor which is both freely movable and is certainly not adherent to the skin is assuredly non-cancerous in nature. It may be either disconnected from the skin, or slightly movable, and still be malignant. But if it is immovable and sufficiently adherent to the surrounding superstructure to pull on and cause retraction of the nipple or dimpling of the skin, it is almost pathognomonic of carcinoma. Retraction of the nipple as a means of diagnosis has had enough, perhaps too much emphasis, as many consider that it must occur in cancer of the breast. The truth is that it occurs in but a little over one-half of the cases (51 per cent.). Dimpling of the skin over the tumor is not always, but nearly always present if rightly sought after. Pinching the skin over the tumor between the thumb and forefinger will usually elicit this sign. Moreover, the skin over the tumor is somewhat roughened and corrugated, and has not inaptly been compared to the skin of an orange. A more delicate test than pinching the skin in the manner indicated is to expose both breasts fully and move each to and fro in every direction until an asymmetry over the tumor shows by contrast as the result of pulling on the skin if the trabeculæ are shortened to any extent whatsoever. This is a valuable sign and the more one uses it the greater will he be inclined to value it, particularly in small, deep-seated, or retromammary growths which are comparatively difficult of diagnosis in large and fatty breasts.

OTHER DIAGNOSTIC POINTS

Other considerations, such as the race, social state, fertility or infertility of the host, together with the presence of a history of trauma and heredity, have each of them too indefinite a bearing seriously to influence a careful diagnostician. If all point in the same direction, they are of confirmatory value. Married women are undoubtedly more often affected than unmarried, and fruitful more frequently than sterile women.

The influence of heredity can not and should not be ignored, neither should it be magnified. It would seem to me that it can not be inferred, much less shown, in

1 Diseases of the Breast. P. Blakiston's Son & Co.

more than one-fourth of all breast cancers. I have only once operated on mother and daughter. Both, I am pleased to say, are still living in good health, the daughter having been operated on in June, 1904, and the mother in July, 1906. The case of the latter was one of the most interesting I have ever seen, inasmuch as the removed specimen demonstrated cancer and a number of very small abscesses—which I think were tuberculous—and Professor McFarland, the pathologist, was unable to say which was the primary condition. A photograph of the specimen is shown in my book.[1] I have frequently operated on women who gave a history of cancer of the breast in their mothers and sisters, and occasionally it has shown itself in three generations—grandmother, mother and daughter.

Before leaving the subject of diagnosis, it must be candidly admitted that in about 10 per cent. of patients cancer of the breast can not be recognized clinically in its early or operable stage, for in addition to the difficulty of differentiating between solid growths, it is even more difficult to distinguish between benign and malignant cysts. This can safely be determined only by the microscope, and that it is necessary to be most careful in separating the one from the other no experienced surgeon will deny.

It is true that a bloody or sanguinolent discharge indicates malignancy, but a clear fluid does not by any means demonstrate benignity. Nothing save the microscope can positively discriminate between simple and malignant cysts. Hence, the danger of any other treatment than excision, not only of the entire cyst wall, but of enough adjacent tissue reasonably to insure eradication of the disease. I would emphasize the fact that cysts are often malignant when they would seem macroscopically, on account of their thin walls and clear contents, to be innocent; furthermore, that the degree of their malignancy is very great, so much so that a mistake made at the time of operation may not, probably will not, be atoned for by a second and more complete operation after the microscopist has made his report. In the first place, a radical second operation, even if performed within a fortnight, is likely to result in failure on account of the liberation and distribution of epithelial cells at the time of the first operation. Secondly, the patient will generally refuse a second operation; and it is most embarrassing to the surgeon to be placed in such a position. Here, as elsewhere, partial removal may do more harm than good, stimulating the remaining cells to an unwonted growth. Therefore, there is but one reasonably safe and certain method to follow in doubtful cases: the patient's consent to a complete operation should first be obtained, explaining fully that it will not be resorted to unless the microscopic examination made at the time of the operation demonstrates its necessity. The most suspicious part of the growth should be removed, along with adjacent structures if possible, and given to a microscopist who is present and who is, moreover, familiar with making reports from frozen sections. The wound should be instantly plugged with gauze, then cauterized with the actual cautery. In this way *only* will the danger of possible dissemination of cancer be minimized. I have followed this plan more than fifteen years and have known but one malignant tumor mistaken by the pathologist for a benign one. In this case the mistake was more than pardonable, although a clinical diagnosis of cancer had been made, as it was not until many sections had been cut at the second or confirmatory examination ten days after the first operation that carcinomatous tissue was encountered. In other words, the portion of the growth first examined was benign. That at the second examination was also found to be benign, until the thirteenth section was made and examined. Figures 1 and 2, from photomicrographs of the only lobule involved, indicate the malignant change to be in its incipiency. The pathologist, Dr. Wieder, thinks it as early, and therefore as favorable a case as he has ever examined. I am indebted to him for these excellent photomicrographs. The patient was advised to have and fortunately accepted the second operation.

Admitting that mistakes must occasionally occur in the hands of those doing frozen section work, it is no more than we must expect even in the less rapid and presumably more careful work ordinarily done in the pathologic laboratory; for I have known some of the very best pathologists to make mistakes and reverse themselves after several examinations of the same tumor. Only a few weeks ago I removed what I supposed to be a large sarcoma of the breast. Figure 3 shows this specimen. In ten days after the operation the report came back from the laboratory "sarcoma undoubtedly," four or five of the best pathologists in Philadelphia having examined the specimen. In fact, it was shown at the Pathological Society of Philadelphia. Several weeks afterward a second report was sent me to the effect that the tumor was also in places carcinomatous. This opinion has been expressed by pathologists of very highest standing, among the number Professor Smith of the University of Pennsylvania, and Dr. Repplier of the Presbyterian Hospital. It is only reasonable to suppose that such apparently contradictory reports must now and then result notwithstanding every precaution to insure accuracy primarily. This is the only case I have ever encountered in which there were both sarcoma and carcinoma undoubtedly present in the same specimen. Others have reported such cases, and it explains many strange and inconsistent things in the subsequent history of cases. For instance, it explains why the secondary or daughter growth did not resemble the parent neoplasm.

COMPLICATIONS

Next to the variety of the growth, the prognosis is most influenced by the presence or absence of enlarged glands in the axilla and elsewhere. This fact has been emphasized by every writer from time immemorial. It has been made more definitely clear by the recent statistics of the Johns Hopkins Hospital[2] and the Massachusetts General Hospital,[3] in both of which series the cases were carefully scrutinized with reference to the involvement of the axilla. In 64 of 232 patients operated on in the Johns Hopkins Hospital, in whom there were undemonstrated glandular involvement, 51 or 80 per cent. were free from recurrence at the expiration of three years. Of 110 patients with demonstrated axillary involvement, only 24.5 per cent. were free from recurrence at the expiration of three years. Of 236 patients with palpable axillary involvement, before operation, operated on in the Massachusetts General Hospital during the decennium from 1894 to 1904, only 12 per cent. were cured by operation. Of 117 patients operated on in the same hospital, in whom no glands were felt in the axilla, 29 per cent. were cured. In nearly all of the cases, even though palpable enlarge-

2. Halsted: Tr. Am. Surg. Assn., 1907, xxv, 64.
3. Greenough, Simmons and Barney: Tr. Am. Surg. Assn., 1907, xxv, 90.

ment of the glands was not manifest, there was found to be microscopic involvement. It is only fair to suppose that limited involvement of the axillary glands may be successfully met by operation, for in such cases the epithelial cells are confined to the interior of the glands and therefore can be entirely removed. But if there is gross involvement of the axilla, particularly if the glands have become matted and fused together, the presumption is that the capsule and tissues around the glands have also become infected and that the prognosis even after an extensive operation, must necessarily be bad. The advantage resulting from early operation, before there is palpable involvement of the axilla, and the hazard of delay until axillary involvement has taken place, could not be more forcibly shown than has been done by the statistics of two such large and representative hospitals. Moreover, the experience in these hospitals, and in all others so far as my knowledge goes, demonstrates forcibly that in cases in which axillary involvement is so great as to make

Fig. 1.—Specimen from malignant tumor, at first mistaken for benign growth; low-power view of only lobule involved.

resection of the axillary vein necessary in order seemingly to get beyond the encroachments of the disease, operation, though possibly prolonging life, has not resulted in a single cure. I would again insist on the fact that no one, however skilled, can always or usually recognize before operation the presence of enlarged axillary glands; and that such enlargement, though not detected beforehand, will nearly always be encountered when the axilla is carefully explored. It is certainly never safe to assume that enlarged axillary glands do not exist. In all cases, even cases of adenocarcinoma in which glandular involvement is less apt to occur than in other varieties, a thorough dissection of the axilla is just as important as removal of the breast itself. Only once have I operated for either medullary or scirrhous carcinoma without encountering unmistakable enlargement of the axillary nodes when the axilla was explored. Frequently I have failed to detect such enlargement before operation.

Next and hardly secondary in importance to involvement of the neighboring lymphatic glands is the adhesion of the growth to neighboring structures, notably the skin and pectoral wall. Every surgeon has recognized the gravity of adhesion to the chest wall and the comparative futility of operation to give more than temporary relief. The statistics of the Massachusetts General Hospital, while clearly indicating this to be a serious complication, show that of 45 such patients, 5, or 11 per cent. passed the three-year limit without recurrence. Of 194 cases in which there was no adhesion to the chest wall, 41, or 21 per cent., were successful. Where the skin alone is adherent, the prognosis, while less favorable than in cases without adhesion, is better than it is where adhesion to the chest wall is present. Of 262 patients with adherent skin, only 42, or 16 per cent. were cured by operation. In 71 patients in whom the skin was not adherent, 23, or 37 per cent., were cured. Therefore, this complication is of much greater importance than it would at first seem, and its unfavorableness is easily appreciated by remembering the fact that the largest and most important of the lymph-bearing channels are found in the skin.

Fig. 2.—High-power view of same acinus shown in Figure.

ENLARGED SUPRACLAVICULAR GLANDS

Palpable enlarged glands above the clavicle have always been considered by surgeons to be the gravest of complications, and practically to preclude operative relief. In fact, they have almost universally been looked on as a positive barrier to operation. While of the greatest significance, it must be remembered that such enlargement may be inflammatory. Of 40 patients with palpable neck involvement operated on in the Massachusetts General Hospital,[3] 2 were found to be free from carcinomatous involvement and were well three years after operation. All of the remaining 38 cases were fatal. Of 40 operative cases in the Johns Hopkins Hospital[4] with positive involvement of the neck and the axilla, 3, or 7.5 per cent. were cured. This is perhaps the best showing that can be made in this class of cases, inasmuch as the neck operation was first advised and has been insistently carried out at the Hopkins Hospital during the past fifteen years. While I have never known a patient of my own with either palpable or microscopic involvement of the supraclavicular glands to be cured by operation, I did have one

patient with decided neck involvement who lived four years after the operation. Although she died of recurrence, it was in the pectoral wound and there was never return above the clavicle. This case long since taught me that palpable neck involvement, while most serious, is not necessarily hopeless. Furthermore, recent anatomic investigations have made it clear that lymphatic involvement of the neck may occur very early in the history of cancerous growths located in the superior hemisphere of the breast, as there are lymphatics which pass over the clavicle and do not connect at all with the axilla. Therefore, I invariably explore the neck in all growths superiorly situated, though I usually find it free from involvement. I do not, however, consider my duty to the patient accomplished until the exploration, the work of a few moments, is made.

Fig. 3.—Patient with tumor, supposed to be sarcoma, with second pathologic report pronounced carcinomatous.

ULCERATION

I consider ulceration of the skin one of the gravest prognostic signs and have never had a patient with such ulceration cured by operation. Of 60 patients in the Massachusetts General Hospital, 4, or 6.6 per cent. were free from recurrence at the end of three years. Of 316 patients without ulceration, 21 per cent. recovered. Of 31 patients operated on after ulceration occurred, Wunderli reports but 2 living at the end of three years. He does not state that they were free from recurrence.

PROGNOSIS

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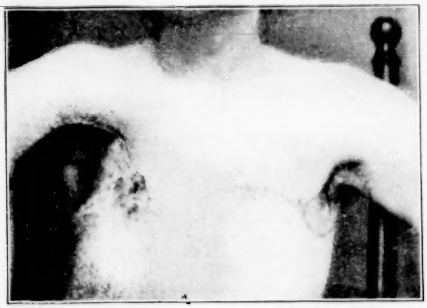

Fig. 4.—Patient six years after a double breast operation. The right side was closed by grafting; the left was not.

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patient with decided neck involvement who lived four years after the operation. Although she died of recurrence, it was in the pectoral wound and there was never return above the clavicle. This case long since taught me that palpable neck involvement, while most serious, is not necessarily hopeless. Furthermore, recent anatomic investigations have made it clear that lymphatic involvement of the neck may occur very early in the history of cancerous growths located in the superior hemisphere of the breast, as there are lymphatics which pass over the clavicle and do not connect at all with the axilla. Therefore, I invariably explore the neck in all growths superiorly situated, though I usually find it free from involvement. I do not, however, consider my duty to the patient accomplished until the exploration, the work of a few moments, is made.

Fig. 3.—Patient with tumor, supposed to be sarcoma, with second pathologic report pronounced carcinomatous.

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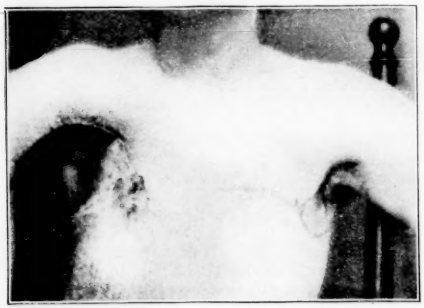

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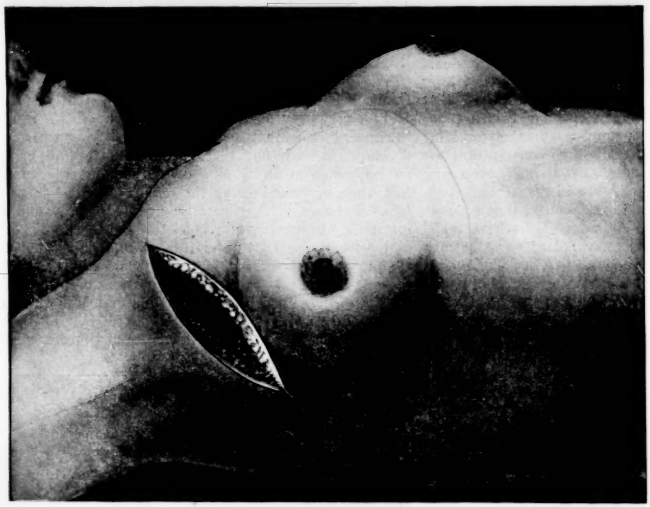


Fig. 6.—Primary skin incision.

cent. passing the three-year limit. This was the best showing, so far as I know, made by any surgeon up to that date.

These results, together with the pronouncement of Meyer and Halsted in favor of a freer and more anatomic operation, stimulated others to greater endeavor, and, we may say, presaged the greatest advance yet made in breast surgery. At the present time it is not claiming too much to say that at least one-third of the mammary cancers which come to operation should be cured, and that early cases should give a much better prognosis — one-half or two-thirds of the patients making permanent recoveries. If the patient fortunately presents herself for operation before there is either adhesion of the skin, axillary involvement or other complication — in other words, while the disease is strictly local—80 per cent., or four out of five, should be cured.

But, taking cases as they come, early and late, we find that of 210 patients operated on in the Johns Hopkins Hospital, whose cases were traced later, 42.3 per cent. were apparently cured three years or longer.[2] This is the best showing made by any hospital of which I have knowledge, but no better than a number of individual surgeons have done. It is my own belief that we shall more accurately measure the true value of any operation for cancer by taking the smaller series of surgeons who are able to follow their private patients for many years after operation. It is simply impossible to trace accurately a large number of hospital cases. I have long since been made to realize the impossibility of satisfactorily doing so and, therefore, have abandoned the attempt. In the first place, one's private patients are more intelligent, seek advice earlier, submit to operation more readily, and if told that their safety depends on regular visits to the surgeon for at least five years after operation, they will willingly do so.

I have not for many years hesitated to tell patients that they have cancer, and, in my judgment, it is a great mistake not to do so. If the advantages of an early operation and the hazards of delay are fairly placed before patients, they will rarely hesitate. Therefore, it is

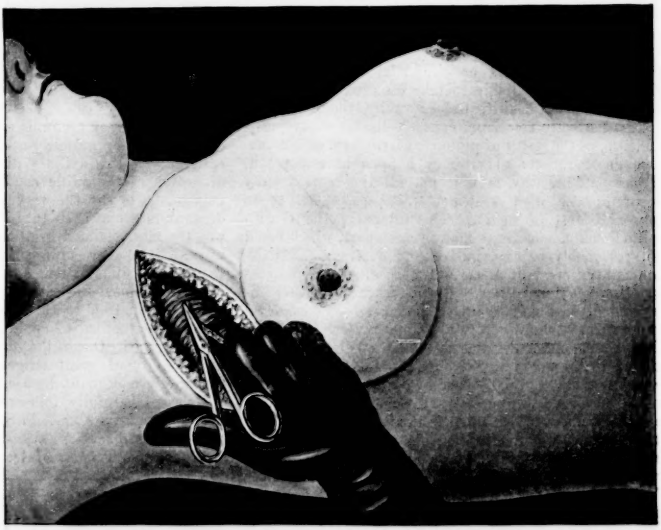


Fig. 7.—Division of pectoralis major near its insertion.

much better and fairer to them to call the disease by a name which all understand and dread rather than to call it a "tumor" or a "malignant growth," the nature of which they do not apprehend. Of course, half-truths are told with the very best and most humane motives, but the whole truth very soon dawns on the unfortunate victims with appalling force, and, mayhap, when it is too late. The truth should be told delicately and with consideration, of course, but it should be told, nevertheless.

During the ten years from Sept. 1, 1898, to September, 1908, or since my removal to Philadelphia, I have certainly operated on more than a hundred patients with cancer of the breast. Of the ward patients treated in the five hospitals with which I have been connected—I estimate them at fifty or upward—very little is definitely known. Therefore, all are excluded. Of 25 private patients operated on, which includes every patient treated from 1898 to 1905, 7 are dead and 1 is living with recurrence. This patient had, at the time of operation, a very large goiter, rapidly increasing in size, which she declined to have removed. Dr. Fell, of Wilkes-Barre, writes me that the goiter has further increased in volume and that the opposite breast is certainly involved to a pronounced extent. Seventeen, or 68 per cent., are living in good health without local or general evidence of recurrence.

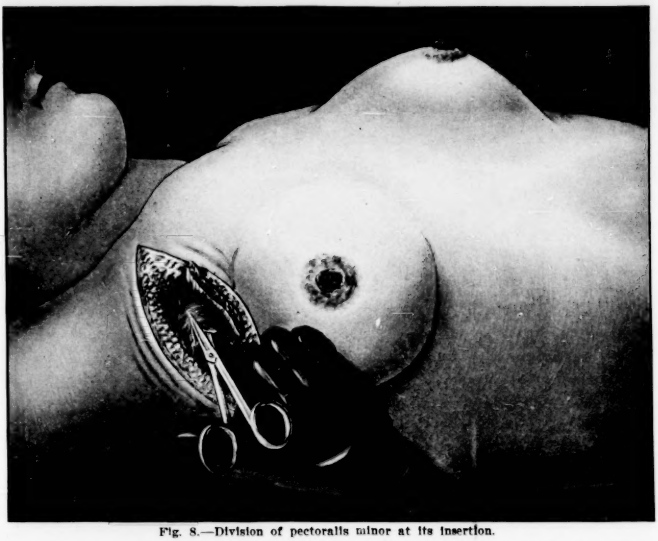


Fig. 8.—Division of pectoralis minor at its insertion.

To show that my cases were at least of average severity, two of the patients had been operated on by other surgeons and had suffered recurrences. In one of them I was compelled to resect the axillary vein to the extent of four inches on account of extensive axillary infection. Both of these are dead. In one other case the growth was so advanced that I should very likely have declined to interfere, but for the insistence of the patient's husband, who was a physician. Both he and she declined operation when I first advised it a year before, as they were about starting to California for the winter on account of his health. Two of the 17 recovered patients had adenocarcinoma, 2 had cancerous cysts, 2 medullary, and 11 scirrhous growths. One of the cured patients had both breasts affected.

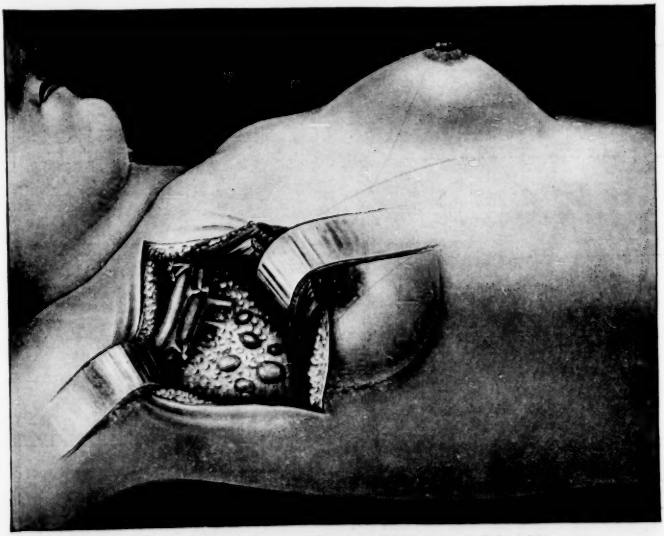


Fig. 9.—Axilla freely exposed and vessels divided at their origin.

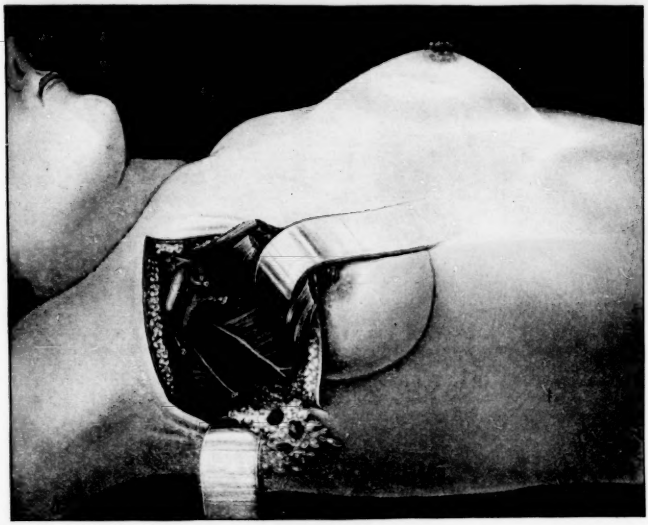


FIG. 10.—Axillary dissection completed. Fascia, fat and enlarged glands en masse shown at base of axilla. External respiratory, or nerve of Bell, shown on the inner wall of the axilla. Subscapular nerve on the posterior wall. Sheath covering all muscles removed.

An interesting and encouraging feature of the series is that two of the cured patients were operated on during pregnancy. Both went to term. Patient 14, whose case was fatal, also had pulmonary tuberculosis. Cancer and tuberculosis rarely coexist, this being the only time I have encountered it. This was a patient of Dr. P. S. Donnellan, now residing in San Diego, Cal.

The patients whose cases are of longest standing were operated on January, 1899, May, 1900, December, 1900, and November, 1902, respectively. All are perfectly well. Figure 4 is from a photograph of the last, on whom a double amputation was done. Skin grafting was done on the right, but not on the left side.

I may add that one patient, a woman, aged 77, with a very bad heart, died suddenly within a week after the operation. As this case has no possible bearing on the subject of ultimate result, it is only mentioned for the reason that I wish to include every private case submitted for operation. Had the patient survived the operation, the chances of a radical cure would have been good, as the growth proved to be adenocarcinoma.

Since 1905 I have operated on a larger number of private cases than in the preceding seven years, and many of the patients have gone long enough to convince me that the end-results will be at least as good if not better than in the series herein reported.

My method of operating has meantime changed somewhat, all the while tending to become more radical. Two years ago I definitely abandoned all flap operations as being at least potentially dangerous. They are alluring and seductive, inasmuch as they often facilitate the closure of a wound otherwise difficult; but that they may do so to the prejudice of an abiding result there can not be the slightest doubt. He who always begins and ends his incision in the same manner for a disease so protean in its manifestations and so widely variant in its local ex-

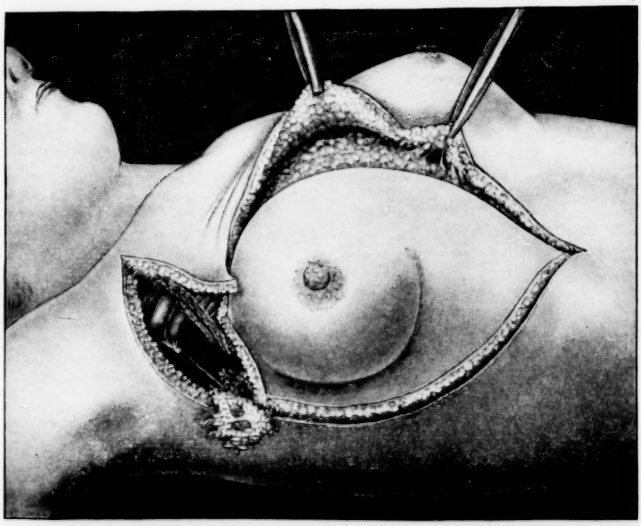


FIG. 11.—Second skin incision. Observe the extensive undermining anteriorly.

pressions will in time necessarily be disappointed and chastened, if not disheartened utterly. If anything has been demonstrated, it is that recurrences generally manifest themselves in the skin, and that its wide removal is the prime consideration, even though the necessarily large wound made must be closed by either undermining or skin grafting.

The operative mortality was less than 1 per cent. in 2,133 operations performed by 25 American surgeons who do a very extensive operation. The radical procedure is just as safe as incomplete operations — I believe safer, because it permits accurate work in the axilla. Much of the previous heavy mortality from breast operations resulted from hemorrhage, shock and sepsis, due to wounding the vessels, especially the axillary vein, on account of an attempt to clear out the axilla through an inadequate wound.

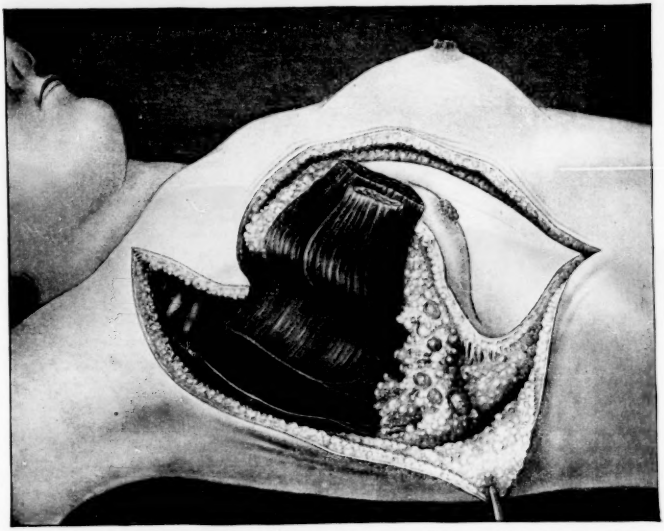


Fig. 12.—Undermining inferiorly. Muscles, breast and axillary mass being reflected prior to removal.

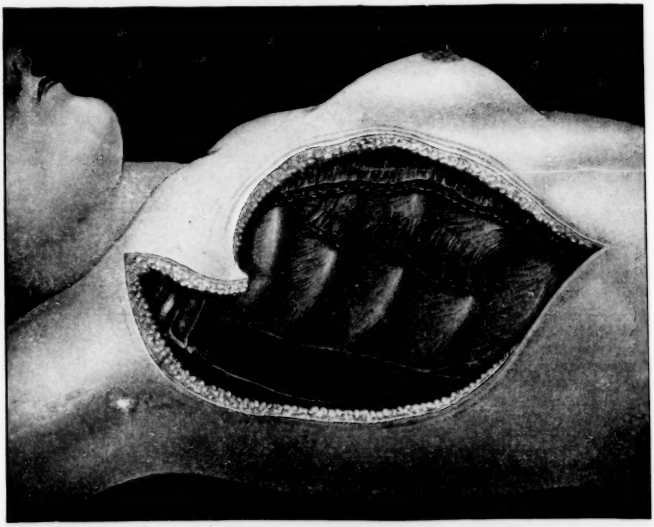


Fig. 13.—Appearance of the wound after removal of the breast, muscles and axillary mass. A small part of the origin of pectoral muscles left as a covering for the ribs. This very much facilitates grafting, when necessary, which is rarely the case. In fourteen operations during the winter it has been necessary in only two cases.

TREATMENT

There is but one treatment for cancer of the breast—operation—and the earlier and more radical the procedure the better. The chances of a cure in any given case depend almost wholly on the timeliness and manner of operating. It should be unnecessary to point out the futility and harmfulness of local applications, caustics, radium and *x*-rays. All are time-consuming, none of demonstrated value; consequently they should not be used until after operation has failed, or possibly as an adjuvant to it in well-selected cases. Hence, it is necessary only to consider a few of the more prominent and basic principles in the operation for breast cancer. A large wound, removal of the pectoral muscles, a thorough axillary dissection *en masse*, are theoretically admitted to be necessary by practically all advanced surgeons. A few who do not remove

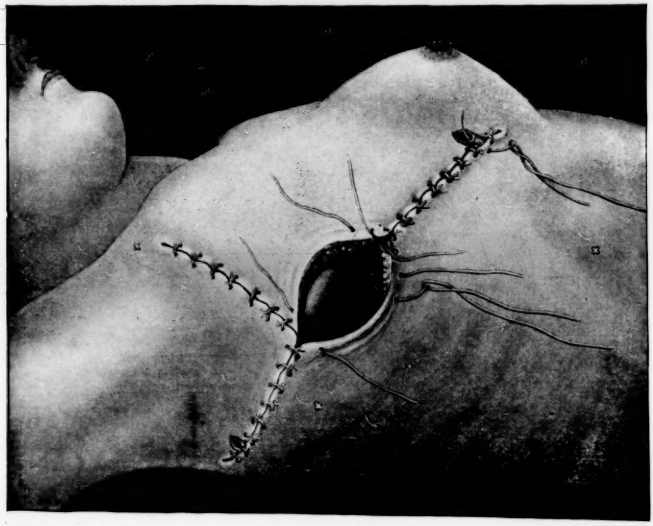


Fig. 14.—Wound being sutured. Middle third of horizontal incision may be, if necessary, covered by skin-grafting. It is rarely necessary. Latterly the drainage tube at either end of horizontal wound is omitted.

the muscles cut across and retract the ends, so as to uncover the axilla, subsequently suturing them. A smaller number, I think, practice removal of the fasciæ covering the subscapular, serratus, latissimus and other muscles exposed in the axillary dissection; and still fewer continue the incision far enough internally and inferiorally to expose the sheath of the rectus in the epigastric triangle. Almost none remove it. The investigations and teachings of Mr. Handley,[10] of London, indicate that carcinoma spreads peripherally by permeation of its epithelial cells along the deep fascial planes; hence the reasonableness of removing fasciæ possibly infected. Mr. Handley also insists—and he has much to support his contention—that abdominal metastases are more frequent than thoracic ones and, instead of the lungs being most often the site of secondary foci, as we formerly believed, the liver in reality is most obnoxious, and that to overcome infection traveling from breast to liver the sheath over the upper part of the rectus should be removed. I was so impressed with his views set forth at Oxford before the British Medical Association in 1904, where we appeared jointly in the discussion of cancer of the breast, that I at once began enlarging my wound internally, making a freer dissection of the epigastric triangle and removing the sheath of the rectus in all cases when the tumor involves the sternal hemisphere, especially its lower quadrant. I have always believed and frequently insisted on it previously that growths involving the inner half of the breast are deadlier than are those of the outer hemisphere. The latter metastasize to the axilla, where it is possible for us to pursue and destroy the enemy; but the former metastasize to the liver, mediastinum, lungs, sternum, ribs or vertebræ—all veritable Gibraltars—defying surgical attack by either assault or siege.

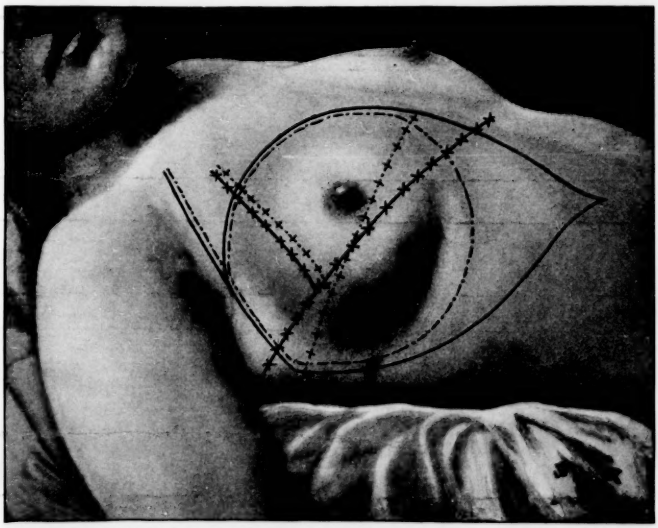


Fig. 15.—Solid black line represents line of incision for oval operation; solid black line with crosses represents suturing after oval operation; broken line represents incision for circular operation, and crossed broken line represents suturing after circular operation.

10. Cancer of the breast and Its Operative Treatment, John Murray, London, 1906.

A vast majority of surgeons so plan their incisions as to work from sternum to axilla, in spite of the inherent dangers incident to such practice, first accentuated, I believe, by A. G. Gerster so long ago as 1885.[11]

In a paper remarkable for its foresight, he used the following words: "The operation should be begun, if possible, with the evacuation of the axillary space and its contents, together with the breast and the intervening tissues, should be removed in one piece." Dr. Gerster informs me that he not only advised, but practiced, this method of operating since 1885, always clearing the axilla, and, so far as he could, ligating the vessels at their origin. He, of course, admits that the later suggestion of Halsted and Meyer (removal of the muscles) greatly facilitates both the axillary dissection and ligation of those vessels high up in the axilla, and was prompt to accept it as necessary for a complete operation.

The advantages of first attacking the axilla are direct and manifest and should be more generally appreciated. They are: First, the axilla may be so hopelessly involved as to make an attempt at removal worse than fruitless. Hence, the sooner it is known the better. Second, the blood vessels can be reached and tied at their origin, which materially lessens both hemorrhage and shock, as the same vessel is not repeatedly cut as is necessarily done in working toward instead of from the axilla. Third, the axillary space is dissected from above downward instead of from below upward, because it is both easier from a surgical and better from a pathologic viewpoint, inasmuch as the dissection is begun beyond the encroachments of the disease. Fourth, we avoid largely, if not wholly, the great danger of expressing and distributing cancer cells to adjacent tissues and remote organs as a result of manipulating the infected mamma and lymph nodes. This is a considerable, not a chimerical danger—so much so that unnecessary handling of the infected tissues should be avoided. Gerster made this clear in his paper,[11] and insisted that it was the chiefest danger to be feared. Fifth, a dissection *en masse* is sometimes made impossible if the work is begun at the sternum, as the heavy mass may pull on and break the axillary tail. It certainly will, if not held by an assistant, during all of which time the infected breast is being manipulated. Sixth, the functional use of the arm will be better, for the reason that in beginning at the axilla instead of ending the incision at this point greater precision is assured. The incision should not extend onto the arm, as the resulting cicatrix in such cases not infrequently restricts the limb in its future movements. This I consider of the greatest importance, as I have more than once seen after the employment of incisions which did either begin or end on the arm a cicatrix which restricted the limb in its upward and backward movements. I have not had the slightest interference with the movements of the arm since confining my incision to the chest. The axilla is reached by a straight incision extending from beneath the clavicle to an inch or less below the tendon of the pectoralis major and at least two finger-breadths internal to the sulcus between arm and chest. This permits perfect access to and work in the axilla.

The several steps of the operation as I now practice it are better shown in Figures 6 to 16 than by a description. Figure 14 shows a drainage-tube at either end of the horizontal incision. I formerly thought this necessary. Latterly I omit drainage.

11. New York Med. Jour., Feb. 28, 1885.

CECOSTOMY AND CONTINUOUS COLOCLYSIS IN GENERAL PERITONITIS AND OTHER CONDITIONS

CHARLES A. L. REED, M.D.
CINCINNATI

A method of treatment that I have been using, for some time, in certain cases of general peritonitis and in some other conditions, is as follows:

1. Recognizing that general peritonitis is always the result of infection, I place the patient in the Trendelenburg position and operate in the usual way to find, and, if possible, to remove the source of infection.

2. Whatever may be the details of that operation, I bring up the cecum and fix it in an incision made directly over its situs, open the loop thus anchored, and in the opening I insert a soft rubber catheter which I fix by a suture to the abdominal wall.

3. I then put a self-retaining effluent tube into the rectum.

4. Through the cecal tube I subject the colon to such treatment and usage as the then existing and subsequently changing conditions may require.

Under this last heading comes, first and foremost, the treatment of patients of general peritonitis, operated on *in extremis*, that is, with a subnormal temperature, uncountable pulse and extreme distention. The first thing accomplished by opening the cecum under such circumstances is, of course, to lessen the distention of the intestines and thus make it possible to deal more effectively with the field of operation. Then immediately after the operation, or, for that matter, before it is completed, I begin continuous irrigation of the colon with normal salt solution at 110 F. About three quarts of solution are retained before the effluent current is established through the rectal tube. By this internal application of heat in direct contact with the solar plexus and by the incidental absorption of water from the colon, a reaction is generally secured with a promptness that seems phenomenal. As soon as this is secured, the free flow from the irrigator is abandoned and the drop-by-drop clysis is substituted and continued for the next twenty-four hours or longer. If the stomach is rebellious, the cecal tube is utilized for feeding the patient. The cecal tube may be retained indefinitely without interfering with convalescence.

This line of treatment is eligible not only in general peritonitis, but in several other conditions. It can be readily adopted as an elective measure, in acute gastric ulcer in which no operation has been done, but in which it is necessary to keep the stomach at rest for a considerable time. It is a capital expedient for feeding purposes following gastroenterostomy and in cases of malignant disease of the stomach or of the upper segment of the intestinal tract, in which operation is not practicable. I have already reported on its utility in certain cases of intraintestinal disease requiring direct medication of the mucosa of the colon.

As a practical expedient this line of treatment has some obvious advantages. In the first place, it is simple and safe. In the next place, its restorative value to the patient—the application of heat, the absorption of fluid and the administration of nutritive and medicinal agents—is beyond question. The complete control thus gained over the colon facilitates the elimination of any toxins that may be lodged in that viscus. Dr. Thomas, pathologist to the Cincinnati Hospital, has made some inter-

esting demonstrations in the cadaver showing that the cecal tube may be utilized for flushing the intestinal tract above the ileocecal valve. Properly predigested food introduced directly into the colon is absorbed much more readily, much more certainly and in much larger quantities than when given by the rectum, and the same fact is true of water, even by the drop method.

I wish in conclusion to urge that cecostomy rather than appendicostomy should always be adopted as the operation of choice. As compared with the presenting part of the cecum, the ceco-appendiceal juncture is an inch or more further away from the abdominal wall. The mesocecum is, furthermore, ordinarily so short and is always so inelastic that the appendix can not be drawn and held forward without a degree of tension that is fatal to its integrity. The distensive pressure of any tube inserted and retained in the narrow lumen of the appendix is another influence that causes it always to perish during the first few days after the operation. Thus an appendicostomy always, sooner or later, resolves itself into a cecostomy. It is better, however, to do a cecostomy as an elective operation

The Groton.

THE RELATION OF FOREIGN BODIES IN THE GALL BLADDER TO GALLSTONE DISEASE

JOSEPH RILUS EASTMAN, M.D.
INDIANAPOLIS

Foreign bodies of various kinds have been found occasionally in the gall bladder in association with gallstones. It is probable that the presence of a foreign body in the gall bladder may, under certain conditions, be concerned in the etiology of the stones. The question of whether any foreign body can produce gallstones quite unaided by micro-organisms has been rather conclusively answered in the negative. It is certain that smooth foreign objects may occupy the gall bladder for a long period without retention of precipitated bile salts.

Jaques Meyer introduced small ivory balls into the gall bladders of test animals and found no stones after a year.

Mignot[1] also found that certain foreign bodies, if aseptic, may be retained in the gall bladder for a long time without causing inflammation or precipitation of solids from the bile. Mignot, in his investigations found, also, that foreign bodies impregnated with virulent micro-organisms, singularly enough, did not lead to the formation of gallstones. Such virulently infected foreign bodies produced more or less violent cholecystitis and precipitation of solids but so long as the bacteria retained their virulence they could not, even with the help of the foreign body, form calculi. There resulted a sediment mixed with pus, but the sediment had no tendency to adhere to the foreign bodies. To form stones, he says, the bacteria must be attenuated. Such attenuated bacteria used in his experiments caused precipitation of the bile solids on cotton wool quite promptly, that is, within five or six months.

The above observations concerning the necessity of attenuation proved true of the *Bacillus typhosus*, *Bacillus coli*, staphylococcus, streptococcus and even the nonpathogenic *Bacillus subtilis*. Reports[2] of similar experiments show that if attenuated bacteria and foreign bodies be introduced together into the gall bladder, stones will be formed.

In the absence of direct proof it seems reasonable to presume that much must depend on the character of the foreign body. The smooth ivory balls of Meyer doubtless produced little irritation; whereas a jagged body, if large, must produce decided irritation and if such irritation be alone unable to produce obstructive inflammation of the gall bladder or ducts it is nevertheless easily seen that the essential bacteria may readily be attracted to such a focus for, as Gilbert has demonstrated, bacteria are frequently sent out from the liver with the bile.

The Mayos[3] called attention to the circumstance that the *Bacillus prodigiosus* placed in the anus appeared after two hours in the mouth and that reverse mucous currents in the intestines and ducts will similarly carry up particles of indigo carmine.

It seems not unfair to assume that bacteria may readily pass up the gall ducts from the intestines.

It is well known that entozoa are frequently found associated with gallstones. Such entozoa in their entrance into the gall bladder doubtless furnish at once the foreign bodies and the atria for infection. This is, perhaps true also of the globules of metallic mercury which have been found in gallstones.

That intestinal parasites may find their way into the gall bladder and carry with them the necessary infection is abundantly shown by many reported cases: Lobstein[4] found round worms associated with gallstones; Gautrelet[5] found bilharzia or intestinal flukes in connection with biliary calculi; Carless[6] found pieces of hydatid membrane in the gall bladder and Buisson[7] found the *Distoma hepaticum* in the gall bladder in a case of cholelithiasis. Homans found gallstone incrustations on sutures introduced through the gall bladder wall at a previous operation, here the suture presumably established an atrium. Nauche reported a case in which he found a steel needle forming the nucleus of a gallstone (Mayo Robson).

I have recently observed a similar case in which the incrustations on the needle were slight and easily removed with gauze and the gall bladder was filled with small stones.

In my case adhesions were present between the gall bladder fundus and the pylorus. It seems most likely that the needle passed directly from the pylorus into the gall bladder carrying bacteria with it. This seems also the most rational explanation of the presence of a fruit-seed in the gall bladder in the case reported by Frerichs. If, however, the ova intestinal worms may travel up the ducts with the aid of reversed mucous currents, the seed may have had a similar experience. Doubtless there are other cases in which pointed foreign bodies, owing to the presence of adhesions between the gall bladder and pylorus may be assumed to have passed directly from the latter to the former. Clarus, quoted by Poullet, in his work on foreign bodies, reports a case observed in St. George's Hospital, Leipsic, in which a needle was found very near to the gall bladder in the groove between the left and right lobes of the liver To say that this needle passed out at the pylorus is perhaps not justifiable in view of the amazing journeys which needles have been known to make in the body.

1. Robson, Mayo: Diseases of the Liver and Gall Bladder.
2. Riforma med., 1901: quoted by Moynihan: Gallstones and Their Surgical Treatment, p 45.
3. Keen's Surgery.
4. Rolleston: Disease of the Liver and Gall Bladder.
5. Union méd., xi, 176.
6. King's College Hospital Rep., viii
7. Ueber die Galle, German transl.

The following is a brief report of a case occuring in my practice:

Patient.—Mrs. H. of Walton, Ind., a patient of Dr. Carpenter, was operated on for gallstone disease on March 19. The symptoms which had led the family physician to the diagnosis of gallstones were those which are observed usually in such cases. There had been present gallstone colic, left-sided pains (suggestive of adhesions between the pylorus and the gall bladder) and shoulder pains, followed by nausea and vomiting. There were jaundice and digestive disturbances, muscular rigidity and bile pigment present in the urine as shown by Baudouin's test, also by Loeffler's blue.

Operation.—When the abdomen was opened the gall bladder was found enlarged and adherent and drawn toward the median line of the body lying in immediate relationship with the pylorus. The gall bladder was opened in the usual way. Gallstones were found, and during the removal of these the scoop caught on a mass of what seemed at first to be a very stiff string of organized fibrin occupying the lumen of the organ. On removing this with artery forceps it was seen that the tough fibrin containing bile solids surrounded a stiff, pointed object which later was found to be an ordinary short sewing-needle.

How the needle came into the gall bladder is not known. It is presumed that the woman swallowed it, but this, of course, is only a hypothesis. The woman was accustomed to use needles like that found in her work and had occasionally put such objects into her mouth, as most women do, but does not remember having swallowed a needle. If the needle was swallowed it might easily have found its way into the gall blader in the manner suggested above.

The body of the gall bladder is, as is well known, in relation by its under surface with the first portion of the duodenum, occasionally with the pyloric end of the stomach and the hepatic flexure of the colon. The needle might have traversed the wall of the intestinal canal proper in any one of these three portions and found the wall of the gall bladder in immediate apposition with the canal, which it had just left. It does not seem at all likely that the needle backed up stream, so to speak through the ampulla of Vater, the common and the cystic ducts. To any one familiar with the causation of gallstones, the probable relationship of the presence of the needle to the stones will be clear. It is quite fair to assume that such a foreign body as the needle, having carried in infection, could provoke sufficient inflammation of the gall bladder and ducts with consequent obstruction as to lead to precipitation of the bile salts and gallstone disease. There were no stones in the ducts and the symptoms, as might be expected, have quite disappeared.

331 North Delaware Street.

The Lachrymal Glands at Various Ages.—A. Goz (Inaug. Diss., Tübingen, 1908), has made an exhaustive study of the human lachrymal glands in male and female of various ages. The tissues were fixed in concentrated sublimate or in formalin; paraffin sections stained in iron hematoxylin and Delafield's hematoxylin and benzopurpurin B. Age bears a direct relation to the size and structure of the glands. The largest were found in women of about middle age. The size of the glandular epithelium decreases after the first year, producing a widening of the glandular lumen. In advanced age there is an increase of connective tissue and an invasion of the glandular substance. It is not uncommon to find in the aged the glandular tissue thus split up into a number of islets but normally glandular degeneration from this source does not occur. The lachrymal glands of the female have a larger average size and weight than those of the male.

REMOVAL OF AN EMBOLUS FROM THE COMMON ILIAC ARTERY, WITH RE-ESTABLISHMENT OF CIRCULATION IN THE FEMORAL

JOHN B. MURPHY, M.D.
CHICAGO

Patient.—Mrs. H. S., aged 41, was admitted to Mercy Hospital at 1:40 p. m., April 29, 1909.

Family History.—Father alive, well, aged 77; mother died at 42 of pulmonary tuberculosis.

Personal History.—The patient was born in Germany and came to Chicago twenty-five years ago; married at the age of 26; habits good; used no alcoholic liquors. Menstruation began at 14 and was until one year previous of the regular twenty-eight-day type; lasted four days; quantity moderate. In the last year the patient had had seventeen periods; flow scanty; last menstruation March 8, 1909; diminished in quantity. She had one child 9 years old; forceps delivery; was confined to bed five weeks; had cholecystic infection in the puerperium and was jaundiced for three months.

Previous Illness.—The patient always had good health up to about five years before the present illness, at which time she had acute rheumatism which lasted four weeks; she had a second attack two years later. The patient was not confined to bed in either of the illnesses and did not know that the endocardium or valves were involved. Following this attack she had shortness of breath and consulted a physician who said she had heart trouble.

Present Illness.—On April 25, 1909, the patient was seized with a sharp pain in the lower part of the left side of the chest and upper abdomen, which later extended down to the pelvis. It was considered pleuritis and the patient was given opiates. The pain continued in the lower part of the abdomen after that in the upper part had entirely disappeared, which would rather controvert the idea of a splenic infarct. On April 26, between 9 and 11 a. m., the patient became nauseated and vomited five or six times; did not have a chill and did not believe she had an elevation of temperature. One hour later both the left and right legs began to pain. A physician was called, and he gave a hypodermic injection in the left leg in the region of the pain. Both legs became cold and remained so until the following morning, when the pain in the right leg ceased and it regained its normal temperature. The left leg remained cold, was blue in the thigh and very pale and shriveled in the toes, foot and ankle. It was cold to midway between Poupart's ligament and the patella. There were large blue blebs scattered over the middle third of the thigh.

Examination.—At the time of admission to the hospital the pulse was 82, respiration 26, temperature not recorded. After the operation pulse was 76, temperature 98, respiration 26. At 4 p. m., April 30, pulse 84, temperature 98.6, respiration 28. May 1, at 4 p. m., pulse 82, temperature 99.2, respiration 26. A careful examination on admission showed that the patient had a mitral, direct and regurgitant murmur. Examination of blood showed 15,400 leucocytes; hemoglobin, 85 per cent. There was no pulsation in her left femoral artery. The upper margin of the area of demarcation that appeared then was about four inches below Poupart's ligament. The limb was undergoing dry gangrene, due to ischemia from arterial obstruction. The patient was immediately taken to the operating room and it was decided to remove the embolus that was occluding the iliac artery.

Operation.—(2:30 p. m., April 29.) The patient was placed on the table with the hip slightly elevated. Nitrous oxid was given for thirty seconds, while an incision four inches long was made downward from an inch above Poupart's ligament parallel to the femoral artery. It extended through the skin and connective tissue. The anesthesia was then stopped, the dissection continued and the femoral artery was exposed for a distance of 2½ inches. It was edematous, easily freed from neighboring structures and two provisional catgut ligatures were thrown around it with an aneurism needle but were not tied. These were used in

preference to the Crile clamp so as to aid in elevating the artery, which was then incised for one inch parallel to its long axis. It was completely thrombosed. With a delicate forceps the clot (a bifurcated plug an inch and a half long) was drawn from below upward, when fresh arterial blood came from below, evidently collateral, through the femoral profundus. A finger was then placed on the lower end of the vessel inside the ligature loop, as shown in the illustration, so as to compress it and stop the return blood and still not injure the intima. With a delicate forceps I began extracting the clot from the proximal side; the artery did not empty. A delicate spoon was then introduced and more clot withdrawn, but no arterial blood came. Then a No. 6 soft catheter was introduced; it passed up a distance of seven and a half inches and was withdrawn filled with grumous, bloody débris, but no arterial blood followed. It was reintroduced but could not be forced through

Location of the clot and direction taken by the sound shown semischematically.

a resistant body at that point. An ureteral catheter was then inserted; it met resistance at the same distance as before, but was forced through the thrombus and passed up nineteen inches, thus catheterizing the abdominal aorta. A small quantity of arterial blood followed its withdrawal. A uterine sound was then introduced. At a distance of seven and one-half inches it met resistance. It was forced a half inch farther, and on its withdrawal a large quantity of grumous, thrombotic débris came, but no arterial blood. It was pushed a little farther on and met a firm resistance. No blood followed its withdrawal. It was introduced for a third time, and with a little additional force at eight and one half inches it seemed to pass through into a free space. This was followed by an intense arterial flow, carrying with it a lot of embolic débris and fresh, bright blood. The arterial flow had then all the pressure and quantity of a normal femoral artery. The finger was then inserted in the ligature loop on the proximal side to stop the bleeding. With a fine silk suture on a full curved conjunctival needle a rapid continuous suture of the linear incision in the artery was made. On removing the digital pressure it oozed a little between the second and third stitches. Two additional supporting stitches at this point completely controlled the hemorrhage, and pulsation could be felt throughout the vessel. Unfortunately this operation was four days after the embolus was arrested in the common iliac just below the bifurcation of the aorta. The skin was necrotic and the limb cold to eight inches above the knee.

Postoperative History.—After the patient was removed to her bed she complained of pain and burning in her toes and ankle, the first sensation she had had in any of those parts since the onset. Considering the ease with which this clot was removed from the second inch of the common iliac artery, it is very much to be regretted that operation was not performed early in this case and in all of these cases. The operation was done without an anesthetic practically, and can be done painlessly with a little cocain or salt solution injected into the skin. The collateral circulation was evidently making a great effort to establish itself, for as soon as I removed the plug from the junction of the deep and superficial femorals in the lower portion of Scarpa's triangle, the blood returned from the distal side. The suture of an incision in an artery is as simple as the suture of an intestine, if a sufficiently small needle be used. This I demonstrated in 1896, at which time I made the first successful end-to-end union of an artery that had ever been made, excising half an inch of the femoral artery at about the same point where I incised it to-day. At the line of demarcation the circulation was improved immediately after the re-establishment of the flow, becoming well marked a considerable distance lower; the amputation was made four days later four inches below the line of bleb formation that existed at the time the embolus was removed, and the flap survived. The circulation in all the smaller vessels at the line of amputation was fairly well established, but the trunk of the femoral was occluded by a loose, non-adherent clot, showing that it was the result of the suppression of the circulation from below or backing up of the blood which caused the thrombus, and not an inflammatory condition.

In cases of aseptic embolism immediate removal by division of the artery at the line of the embolism or below it should be resorted to. These emboli produce mere mechanical obstruction and the circulation is at once re-established by their removal.

The symptoms which indicate the occlusion of a large artery are, first, pain; second, ischemia of the limb; third, cooling of the surface; fourth, absence of pulsation in the arterial trunk. The number of hours that may elapse before a tissue becomes incapable of restoration has not been definitely determined, but from the length of time a constrictor may be kept on a limb for the suppression of hemorrhage and the vitality of the limb restored, we know that many hours of complete suppression of the circulation is not incompatible with restoration of the life of the tissues.

Since 1896 I have had two additional end-to-end sutures of arteries, one of the femoral in Scarpa's triangle for a bullet wound, and another of the first portion of the axillary just below the clavicle. In both end-to-end union was effected by my suture method and the circulation in the extremity promptly restored. A little over five years later all three of these end-to-end unions were examined by Dr. Neff and the circulation in the extremities was found perfect. I have also had a lateral suture of the external iliac and axillary arteries with good results. In September, 1908, a successful end-to-end anastomosis was made of the femoral artery into the femoral vein for endarteritis obliterans.

Since I published my original experiments and results in this line and demonstrated the feasibility of this work, Payr, Hoeffner, Exner, Ullman, Carrel, Guthrie and others have supported the practicability of arterial suture and demonstrated that extremities and organs can be transplanted and the circulation maintained, if accurate suture of the arterial and venous trunks is made. The transplantation of organs must adapt itself best to embryologic ectodermic and endodermic glands, as their function is essentially a cellular one and not materially dependent on nerve supply, just as in horticulture the product of the graft depends on the "epithelial" cells in the bud, and these are maintained through nutrition derived from the engrafted trunk, the "epithelial" cell producing its normal or physiologic product.

In the removal of septic infarcts there is little to be gained in a practical way, as they are usually multiple. With the infarcts resulting from acute or chronic vegetations on the cardiac valves, good results should be obtained. Even cerebral ischemia should be amenable to this treatment, when due to an embolus arrested in the common or internal carotid by opening the common carotid and aspirating through a catheter; or a subclavian clot by incision of the axillary artery.

I believe that aspiration through a catheter is a better means of removing the plug than the one which I adopted. If the catheter is divided on the slant with its end open it can be readily introduced into the artery; unless the embolus is extremely hard it can with suction be drawn into or fragmented by the catheter and thus the artery freed.

Incision into the artery at the seat of arrest of the embolus, if it has been there for any length of time, is not an advisable procedure, as I found in my experiments that when a thrombus rested any considerable time on the intima it roughened it and increased its tendency to subsequent thrombosis. Therefore, the artery had better be divided above or below (preferably the latter) the point of impaction of the embolus. A gradual occlusion of the circulation does not produce gangrene in the extremity. In the British Museum are specimens showing that in gradual occlusion of the thoracic and abdominal aorta by cicatricial masses an abundant collateral circulation was developed sufficient to compensate for the occluded artery. It is the sudden ischemia that causes the gangrene.

The curved needle of the conjunctival type, which has its cutting edge easily rubbed off on a whetstone, is a good type of needle for deep work. A straight needle is difficult of insertion, and an "extremely fine needle" is not a *sine qua non* to arterial suture. After the removal of the Crile clamp or the digital compression there is often considerable oozing through the stitch holes. A gauze compression for thirty or forty seconds will completely stop all this bleeding. Silk should be used and not animal suture, as a clot rapidly forms around the silk, plugging the stitch hole.

The diagnosis of embolism of the mesenteric artery has never been made early enough to have this procedure available as a life-saving measure, but let us hope. Here, as in other types of emergency surgery, the operation must be timely in order to be successful. This applies particularly to the cerebral ischemias. The removal of an embolus from the pulmonary artery by Trendelenburg, while it terminated fatally, deserves special mention.

100 State Street.

Clinical Notes

FAVUS TREATED BY BACTERIAL INOCULATIONS

PRELIMINARY REPORT OF A CASE

G. A. PERSSON, M.D.
MOUNT CLEMENS, MICH.

This case of tinia favos a is perhaps particularly interesting, because, so far as my knowledge goes, there is no case of favus on record i n which the opsonic treatment has been used.

Patient.—When the patient first came to my office, which was about Oct. 3, 1908, he presented a classical picture of the disease. The eruption, which is shown in Figures 1 and 2, was very extensive. The lower extremities were affected in the same proportions, particularly below the knees. The nails on both fingers and toes were also involved, which gave the patient continual annoyance. The characteristic "mouse" odor was evident. The patient's general condition appeared about normal. For twenty-three years he had suffered continually without any relief, except for very short periods of slight improvements during the first three years of the disease.

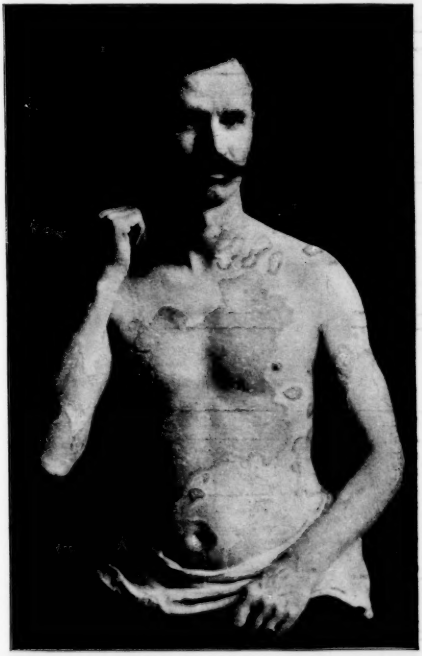


Fig. 1.—Patient with tinia favosa from photograph taken before beginning of treatment.

Examination.—Microscopic examination of the scales revealed the presence of the *Achorion schönleinii*. It was decided to isolate the specific fungus of this disease and prepare a bacterial vaccine from it. A culture from the scales planted on agar and grown in the incubator for seventy-two hours gave the characteristic culture, microscopic examination of which revealed a mixed culture of the *Achorian schönleinii* and *Staphylococcus aureus*.

Treatment.—For the purpose of preparing a bacterial vaccine from the *Achorion schönleinii*, a pure culture was made in the following media: 80 parts of sterile sea-water, with a specific gravity of 1015 to 20 parts of a 5 per cent. solution of nucleinic acid. This culture was placed in the incubator for seventy-two hours, when microscopic examination revealed a decided alteration in the fungus. In place of the narrow flattened tubes or

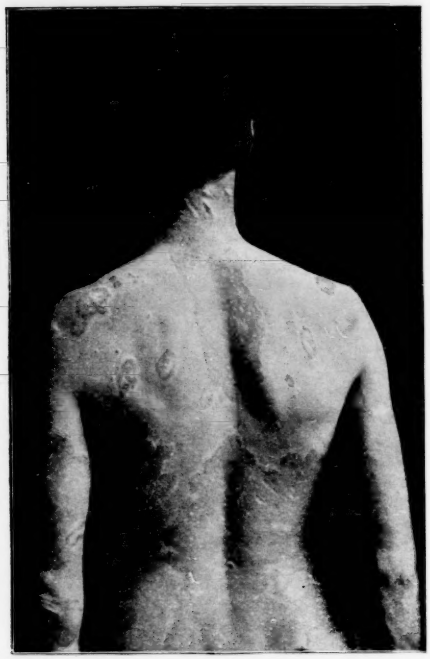
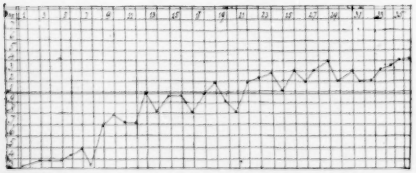


Fig. 2.—Another view of favus patient shown in Figure 1.

threads, ramifying in all directions, without definite arrangement, unicellular threads, quite uniform in length, and very numerous spores were found. Proper dilution of this culture by physiologic salt solution was made to give a bacterial suspension representing 5,000,000 individual segments or spores to the cubic centimeter. This was sterilized at 180 F. for forty-five minutes. The patient received in all seventy-seven inoculations, the amounts of which are given under the chart of the opsonic index, Figure 3.



. Fig. 3.—Chart of patient's opsonic index during treatment. Amounts of bacteria given in treatments were as follows: first three days, 500,000 a day; fourth and fifth days, 500,000 twice a day; sixth day, 2,000,000 twice a day; seventh, eighth and ninth days, 3,000,000 twice a day; tenth day, 4,000,000 twice a day; from the tenth to the thirty-fifth inclusive, 5,000,000 twice a day; from the thirty-fifth to the sixty-fifth inclusive, 2,000,000 every second day.

Course of Disease.—Up to the tenth day there was very little improvement in the conditions of the skin. On the thirteenth day the patient was ordered to take a warm bath, which removed nearly all of the scales, leaving a dark red surface. Up to the eighteenth day a few scales had formed on various parts of the former eruption. The patient was again ordered to take a warm bath, which removed the scales, and it was noticed that the skin appeared more like normal, the dark red color having largely disappeared. On the twenty-seventh day few areas of small size were visible. Another warm bath at this time removed all the scales. The patient was ordered to use friction in form of mechanical vibration all over the body, particularly to the parts which were last affected. From this time no further eruption appeared and the skin gradually regained its normal color. The patient was discharged during the latter part of November. Up to the present time there is no return of the disease.

A DOUBLE CATHETER FOR IRRIGATION AND DRAINAGE

CONTINUOUS IRRIGATION AFTER PERINEAL PROSTATECTOMY AND DRAINAGE AFTER PERINEAL SECTION

HARVEY A. MOORE, M.D.

Clinical Professor of Genitourinary Surgery, Indiana University School of Medicine, Attending Genitourinary Surgeon, Indianapolis City Hospital and State College Hospital, etc.

INDIANAPOLIS

Continuous irrigation after prostatectomy and drainage after perineal section have always been more or less of a *bête noire* to surgeons. Dr. H. H. Young, of Baltimore, recommended the stitching together of two catheters, and this has proved an excellent expedient. Acting on that suggestion, I have designed a double tube for drainage and irrigation. This is a double soft rubber catheter in one piece, and has proved much more effective. The smaller section is the inflow and the larger the outflow; at the vesical extremity of each there are two openings, one at the end and one at the side. At the outer end the catheters are not joined for a distance of

Double tube for continuous irrigation after perineal prostatectomy and drainage after perineal section.

six inches, thus allowing them to diverge at any angle for convenience of attachment to the supply and drainage receptacles, respectively.

The greatest advantages of this instrument are, first, that, on account of the large lumen of each catheter, there is practically no danger of blocking the outflow by coagulated blood or other débris, and, second, that irrigation, continuous or interrupted, may be done without any manipulation of the wounded parts, the patient being thus left undisturbed.

I have used this tube in a number of cases after perineal section and perineal prostatectomy, and have found it much more satisfactory than any other drainage. The tubes are made regularly in 24 and 30 F., but may be had in any size.

321 Newton Claypool Building.

RESECTION OF SEVENTY INCHES OF INTESTINE AFTER PERFORATION OF THE UTERUS

WITH A COINCIDENT RELIEF FROM INTESTINAL INDIGESTION

H. P. BARTON, M.D. AND C. A. SMALLEY, M.D.
LOS ANGELES, CALIF.

History.—On Aug. 26, 1907, Mrs. C., a primipara, being threatened with a miscarriage, called her physician, who caused her removal to a hospital and there with the patient anesthetized, attempted to empty the uterus. The patient had not been frank with her physician, and under the impression that the pregnancy was of only a few weeks duration, he attempted to use a curette. He perforated the uterus, and while using the ovum forceps, drew out through the vagina a loop of intestine before recognizing his mistake. We were called in to aid in repairing the damage. Considering the traumatism, the patient was found to be in a very fair condition, and after a hypodermoclysis of normal salt with adrenalin added, she rallied so well that we deemed it advisable to make the repairs immediately, and the anesthetic was continued.

Operation.—The abdomen was opened in the median line. The blood welling up into the wound from the abdominal cavity was mopped out and there appearing to be no further hemorrhage, the uterus was brought up into the wound. A jagged perforation about one and one-half inches in length was discovered in the fundus a little posteriorly. This opening was enlarged sufficiently to draw the incarcerated intestine out, and, protected by hot towels, it was placed to one side of the incision. A four or five months fetus was then delivered through the enlarged perforation together with the placenta and membranes. The perforation was closed by deep muscular stitches of catgut, with a Lembert suture of catgut for the peritoneum. Attention was then directed to the intestine.

Resection of Intestine.—A portion of the jejunum and ileum was found to be detached from its mesentery, the mesentery being shrunken and black.

The injured portion of the intestine, measuring seventy inches, was resected and the mesentery corresponding to the resected intestine was removed in the shape of a "V." The intestine was then rejoined by an end-to-end anastomosis, a linen suture for the mucus and submucus coats being used, with catgut for the peritoneal coat. The mesentery was then brought together with a fine continuous catgut suture on both sides. The abdominal incision was closed in layers with catgut for the peritoneum and fascia, and a silkworm subcuticular stitch for the skin.

Postoperative History.—The patient was returned to her room in fairly good condition and progressed nicely, her temperature at no time running above 100 degrees.

September 1: The wound was inspected and a hernia in the incision was found. She was therefore taken to the operating room, anesthetized, and the skin stitch removed. The catgut in the fascia and peritoneum had been absorbed and the intestine lay in contact with the skin. The peritoneum was again closed with catgut and through and through figure of eight silkworm stitches were used for the fascia and skin.

The patient then progressed to an uneventful recovery, and was discharged from the hospital, Sept. 15, 1907.

As a rather interesting sequel to this operation the patient, who had been a persistent sufferer for several years from intestinal indigestion and had been thin in flesh, developed a voracious appetite, which required four or five meals a day for several weeks to satisfy. She seemed to digest her food perfectly and gained many pounds in weight.

Whether the relief of this indigestion resulted from the removal of a diseased portion of the intestine we do not attempt to say.

447 South Olive Street.

A UNIQUE PERFORATION OF THE SIGMOID FLEXURE, CAUSED BY AN ENEMA FROM GARDEN HOSE

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Professor of Surgery, Chicago Policlinic; Surgeon to The Alexian Brothers' Hospital and St. Joseph's Hospital
CHICAGO

History of Injury.—A middle-aged Italian was referred to me by Dr. Guagliata with the following history: The patient, a chronic sufferer with constipation, had long been in the habit of getting relief by attaching a piece of garden hose to the kitchen faucet, inserting the other end into his anus, and then turning on the stream. He had employed this procedure many times before successfully and with no untoward effects. On the day in question he had, before going to work in the morning, employed his customary flushing. This time, however, something unusual happened, for he was seized with severe pains in the abdomen. He went out and worked as a common laborer for several hours without experiencing much discomfort. Then, however, the pains recurred or became more severe and he went home. The abdominal pains were intense and were accompanied by vomiting. The patient was then seen by his family physician, who elicited the foregoing history and sent him to the hospital. I saw the patient about eight hours after the accident.

Examination.—The patient, a muscular man of about 45, presented a picture of bad shock. The expression was anxious, and cold beads of perspiration stood on his forehead. The respirations were rapid, shallow and of a costal type. The extremities were cold and the knees were drawn up. The pulse was 120 and of small volume. The patient complained of pain all over the abdomen. The abdominal wall was muscular and of board-like rigidity throughout, but was not distended. Palpation elicited tenderness throughout, possibly more in the lower abdomen, and the reflex rigidity was extreme. Rectal examination was painful, but gave no further information. The percussion note over the abdomen was tympanitic in front and dull in the flanks; this dulness did not change with patient in a lateral position. Temperature was 99. In other words, the patient presented a classic picture of "acute abdomen," or beginning general peritonitis.

Operation.—The patient was immediately prepared for laparotomy, and the abdomen was opened about ten hours after the garden hose injection had been taken. When the abdomen was opened in the median line below the umbilicus a great quantity of turbid fluid gushed forth, in which were floating quantities of fecal matter large and small. On examination a perforation was quickly discovered in the sigmoid flexure of the colon. It was a longitudinal tear, located opposite the mesocolon, one and one-half inches in length. The injured bowel was brought up, washed off with salt solution, and sutured with a double row of silk sutures in the usual manner. No further perforations being found, the peritoneal cavity was thoroughly flushed out with hot normal salt solution, a large split rubber tube with a gauze wick was inserted into the pelvis and the abdomen closed.

Postoperative History.—Recovery was uneventful. The patient was given water freely by mouth, but no proctoclysis, nor were enemas given for a week. The bowels moved freely after several days without the use of a cathartic, and regularly thereafter. After forty-eight hours the abdomen was soft and free from tenderness, and as there was little drainage the rubber tube was replaced by a cigarette drain. This was gradually shortened and the sinus was entirely closed in about three weeks. The patient was most intractable throughout; he did not stay in Fowler's position, or even in bed after the first few days. At the end of the first week he begged for his clothes and was up and about after ten days. He left the hospital before the wound had entirely healed, but it was subsequently learned that he suffered no ill effects from being about so early.

685 Fullerton Avenue.

A CORNEAL CURETTE

JOHN M. WHEELER, M.D.
NEW YORK

The instrument shown in the accompanying illustration may be used for curetting the cornea in any condition in which curetting is indicated, but its chief field of usefulness is in the removal of foreign bodies. Both edges are ground sharp, and the end of the instrument is ground to a point which projects a little beyond the shank. The construction of the curette is such that in its use the field of operation is not hidden from the surgeon. Most foreign bodies can be removed from the cornea without difficulty with the cutting edge of the instrument, and the foreign bodies almost invariably

stay on the curette. Occasionally a small bit of emery or like material penetrates the cornea to such a depth that the use of a sharp-pointed instrument is indicated. For this reason a point is supplied on the curette, and in using this point the shank of the instrument acts as a guard, so that there is no danger of perforating the cornea in removing foreign particles.

On account of its safety this little instrument will appeal especially to the general practitioner who of necessity must often remove foreign bodies from the eye.

64 West Fortieth Street.

Therapeutics

CHRONIC BRONCHITIS

Forchheimer, of Cincinnati, thoroughly discusses this troublesome disease in the *American Journal of the Medical Sciences,* February, 1909. He believes that the patient who has marked exacerbations in cold weather or has a prolonged winter cough should, if possible, go to a warmer climate during the cold season. This is especially advisable in cases in which there is an intermittence of the bronchial catarrh during the warm seasons, because many times chronic bronchitis begins as a recurrent winter cough which persists, until finally, it becomes an all-the-year cough. Like all recurrent inflammations and neuroses, the more frequently it occurs or the longer that it has lasted, the more persistent is the condition, consequently, every effort should be made to prevent a prolonged winter cough.

Of course, the most frequent cause of such a recurrent cough is latent or more or less active tuberculosis, but chronic bronchitis without tuberculosis while not of common, is certainly not of infrequent occurrence. If there is any season of the year that is worse for such patients than any other, it is the windy, dusty period of early spring, when there is but little, if any snow in the Northern and Eastern United States, and when it is a little too cold to sprinkle the streets properly, or the city authorities are careless in not beginning the sprinkling of the streets early in the season. Dust is certainly an exciting cause of the bronchitis, and also such dust carries with it germs which easily produce infection, when deposited on mucous membranes that are so unhealthy as are the bronchial mucous membranes of these patients. Also, most of these patients become more or less debilitated by the cough and expectoration, and are susceptible to other infections, especially of the upper air passages.

It is too often forgotten in the treatment of chronic bronchitis that though the cough and expectoration is the most important symptoms and the one for which the patient desires treatment, a careful investigation into his general condition, and treatment aimed at his general health will cause more improvement than the administration of expectorants, either sedative or stimulant. Generally, however, some expectorant may be advisable. In this form of bronchitis, opium, or any of its derivatives, is rarely indicated as a sedative, as the cough is usually for the purpose of removing the secretion in the bronchial tubes, and a sedative, or anything that would diminish the irritability of the nerves so that the secretion would accumulate and not be expectorated, would be inadvisable and contraindicated. Also, ipecac, alkalies, and pilocarpin, mentioned by Forchheimer, are rarely indicated in chronic bronchitis. Ammonium chlorid for its stimulant action in causing the mucous membrane to secrete a healthy mucus may for a short time be of advantage, but should not be used too long, as it sooner or later causes nausea and disturbance of the stomach.

In certain cases, some of the aromatic expectorants as turpentine, benzoates, eucalyptol, and santal oil may be of benefit to the patient. Creosote or some of its many preparations may be of value, but most of these drugs, if administered for any length of time, cause indigestion, and, if there is any kidney disability, many of them are contraindicated.

Terpin hydrate is often the best and simplest drug to administer.

If an asthmatic condition be present with the bronchitis, potassium or sodium iodid becomes the best treatment.

Circulatory debility should certainly be treated. Strychnin alone will often do these patients good. Arsenic in small doses is sometimes of advantage.

Forchheimer believes that there is no doubt that some of the aromatic oils, when inhaled from proper inhalers, are of great value.

He also calls attention to the posture treatment when profuse bronchial secretion tends to remain in the bronchial tubes, and would gradually raise, little by little, the foot of the bed of such a patient, until the head is distinctly lower than the feet. He finds by experience that the first elevation of the bed at the bottom should be about two inches; later this may be increased to four or five inches. If there is one particular part of the lung where the secretion accumulates such a side posture as will facilitate the flow of this secretion toward the larger tubes and thus promote expectoration, may be adjusted by pillows or bolsters.

In fetid bronchitis, creosote, thymol, oil of eucalytus, or oil of pine inhalations are of benefit. Also the administration of creosote and of santal oil internally seems to be of benefit, but the more thoroughly the dilated bronchi are evacuated of their secretions by posture, the less odor will the expectoration have. Also, such patients with fetid bronchitis should, if possible, sojourn for some time in pine woods.

It should not be forgotten that these patients in some instances have combined with the necessary cough an entirely unnecessary one, a cough that raises nothing and is due to throat irritations, often to an enlarged and irritated lingual tonsil. Such a cough can be more or less controlled by the patient, if he is told that it is almost unnecessary, and may also be markedly helped by a few daily local applications of boroglycerid to the lingual tonsil. Soothing alkaline gargles will relieve this kind of a cough, which should not be treated by sweet, irritating, or nauseating expectorants.

Forchheimer well says that the best climate, or the best "cure," to which the bronchitis patient should be sent is determined by the individual condition of that patient. While one patient had best go to New Mexico, another had best take a sea voyage; while one needs circulatory and skin stimulation at some sanatorium or hot springs, another needs exercise and mountain climbing.

As Forchheimer suggests, and as has been pointed out by others, there can be no question that we do not frequently enough teach these bronchitis patients respiratory exercises.

Patients with some arteriosclerosis do well on small doses of iodid, given for long time. Other patients need sufficient daily exercise to cause profuse perspiration.

EPILEPSY

Lest too much reliance be placed on the administration of drugs in this disease, it is well for us to consider the statements made by Dr. William T. Shanahan, assistant physician at the Craig Colony for Epileptics, Sonyea, N. Y. (*The Dietetic and Hygienic Gazette*, March, 1909). He says that the three great essentials in the management of epilepsy are the diet, hygiene, and occupation, and that it is only after these have been arranged to the best possible advantage of the patient that medicinal treatment is to be considered.

To ascertain the best diet for the individual epileptic, the gastric and intestinal digestive powers should be thoroughly investigated, and to do this properly, the twenty-four hours' urine and the feces should be carefully examined. Such examinations, at least if several times done, will disclose many errors in metabolism, which may be prevented by treatment, management, or a radical change in the diet. The digestive system being made as perfect as possible, the toxins that so often are the instigators of epileptic attacks will not form, be absorbed, and circulate in the blood. Not only should the kidneys and intestines be made as nearly as possible perfect excretory organs, but the skin should be made as active as possible by massage and exercise.

Of course all epileptics should avoid alcohol, and often tea and coffee. Rich, greasy, highly seasoned foods, or indiscretions as to amount, should not be allowed to occur in the dietary of an epileptic, and special care should be exercised that the epileptic receives nothing but the freshest and most properly cooked food.

If, in spite of corrections in the diet, intestinal fermentation and putrefaction occur, the various culture preparations of lactic microbes may be administered, or yeast often acts to advantage in preventing such intestinal conditions. Radical changes in diet—from a mixed diet to a vegetable diet, or to a milk diet, or to a temporary buttermilk diet—may aid in eradicating the disturbance in the intestine.

Constipation should certainly never be allowed in epileptics, and drugs may be administered to prevent it, if must be, although of course it is best to prevent constipation by diet, exercise, and by drinking plenty of water. The best laxative, if one must be given, must be determined by the individual patient. If, in spite of ordinary laxative drugs or laxative treatments, the feces tend to remain long in the intestines, active catharsis with calomel or castor oil must be caused periodically. With such persistent constipation the advantage of the administration of sweet oil, and of the high injection into the colon of warmed sweet oil should be remembered.

Shanahan says that for the control of the epileptic seizures, bromin or its salts still hold an important place. He does not state which bromid he prefers, but sodium and potassium are probably the best. If plenty of water is drunk to make the skin and kidneys active, if the bowels move well daily, and if the skin is properly bathed, and good, healthy out-door exercise is taken, the disturbing symptoms of bromism will not develop, especially as the large doses once given have been found unnecessary. If salt (sodium chlorid) is more or less thoroughly removed from the diet, it has been found that the bromin salt, perhaps preferably sodium bromid, takes its place, and less bromid is needed to control the frequency of the epileptic seizures. Shanahan cautions not to stop suddenly the administration of large doses of bromids.

He also states that if the excretory organs of the patient are kept active, the condition of status epilepticus, or rapidly repeated seizures of epilepsy, will not occur; hence the prophylactic treatment is the best. Such a condition, however, being present, he says that chloral hydrate must be used; it is best given by enema and its retention may be aided by laudanum. He does not say how much is generally needed, but states that it should be used with caution, and exhaustion guarded against by the use of stimulants such as aromatic spirits of ammonia, and enemata of strong black coffee, at a temperature of from 100 to 105 F. If needed, he would also give physiologic saline solution intravenously or by hypodermoclysis, and if there is much cardiac depression he uses strychnin, digitalis, and strophanthus.

At the onset of the status epilepticus, gastric and intestinal lavage are often of value. Venesection may be used in plethoric cases, and lumbar puncture has been tried, but with only questionable success. If the epileptic seizures are rapid and severe, chloroform inhalations may be administered until the chloral has had time to absorb from the rectal or colon injection.

Of course in treating any individual epileptic, an attempt should be made to correct any physical disability that may be present. Adenoids and enlarged tonsils should be removed; decayed teeth should be cared for; eyes should be fitted with glasses, if they require it; hemorrhoids should be removed, if present; pelvic disturbances in females must be prevented, medicinally, if may be, or operatively if must be.

Shanahan does not speak of the disturbances of menstruation being a frequent cause of epilepsy in girls and women, nor of the advantage of the administration of thyroid both as an emmenagogue and as a preventive of nitrogen poisoning. It is a fact that many female epileptics may be greatly improved and even cured with general management and the proper administration of thyroid.

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[For other information see second page following reading matter]

SATURDAY, MAY 22, 1909

AORTITIS, AORTIC ENDOCARDITIS AND SYPHILIS

With the development of two new diagnostic criteria of syphilis, the Wassermann reaction and the finding of spirochetes, it has been possible to approach the so-called parasyphilitic diseases from a new ground, with the result of brilliantly confirming the conclusions previously reached by clinical observation. As the parasyphilitic affections are late manifestations or results of syphilitic infection, and for the most part not accompanied by definite syphilitic lesions, the search for spirochetes has not been of much help in their etiologic determination, since these organisms are usually found with difficulty in even the most typical lesions of the tertiary stage. With the help of the Wassermann reaction, however, it has been demonstrated that the relationship between syphilis and such diseases as tabes and general paralysis is fully as frequent as the clinicians have long believed, and if anything more so. The variations in the results obtained by the laboratory investigators who have applied the serum test to these diseases, are about the same as we have been accustomed to see reported by clinicians who were endeavoring to establish a relationship on the basis of clinical history and coexisting syphilitic manifestations.

Among the parasyphilitic lesions degenerative and productive changes in the aorta, with resulting aneurism or aortic insufficiency, have long presented problems to the pathologist and clinician of great practical as well as theoretic interest. Even Ambroise Paré, Morgagni and other early masters of medicine recognized that syphilis played an important rôle in the etiology of arterial diseases, but we owe especially to the work done under Heller at Kiel our present understanding of the characteristic features of aortic syphilis. Now it is generally recognized that fleshy nodular thickenings of the aorta, most abundant in the ascending part, and frequently extending to the aortic valves with resulting incompetence, are commonly of syphilitic origin, especially when they concern individuals in the prime of life. Microscopically, these lesions are found to involve chiefly the media and adventitia, consisting of foci of round cells in the vicinity of the vasa vasorum, while in the media may be found foci of necrosis which sometimes are typically gummatous in character. As a rule, the histologic features of these lesions are not such as to prove conclusively their syphilitic origin, and consequently the pathologists have discussed at much length the proportion of such aortic lesions that should be ascribed to syphilis, and the possibility of similar lesions being produced by the acute infectious diseases. It seems to be generally accepted, however, that the most usual cause of such changes in the aorta is syphilis, although it is possible and probable that they are not by any means specific evidence of syphilitic infection. In other words, their status is just about the same as that of tabes and paresis in respect to etiology. Mönckeberg found that of the reported cases of aortitis 33 per cent. showed positive evidences of syphilis, while in a further 44 per cent. other parasyphilitic affections coexisted. Chiari reported that of 27 cases of undoubted syphilis examined post-mortem aortitis was present in 16, and of 44 paralytics 21 showed aortitis, indicating that more than one-half of all syphilitics coming to autopsy show characteristic lesions in the aorta. Similar results have been obtained by clinical observation. In v. Strümpell's clinic of 24 cases, tabes and aortic lesions, chiefly aortic insufficiency, coexisted in 15.

For some reason the application of the serum test to aortic disease has lagged behind its use in the study of nervous cases, but the results that have now been obtained are fully as convincing, and perhaps even more valuable from the therapeutic point of view than the results in tabes and paralysis. Fränkel and Much first applied the Wassermann test to the blood from cadavers showing aortitis with aortic insufficiency, and in all the six cases examined the reaction was positive. Citron[1] has studied systematically, by the serologic method, with interesting results, all the cases of aortic insufficiency coming to Kraus' clinic in Berlin in the past year and a half. Although only 14 per cent. of all cases of uncomplicated aortic insufficiency gave definite, and a further 26 per cent. suggestive, clinical evidence of syphilis, yet no less than 62.6 per cent. gave a positive serum reaction.

The earlier attempts to locate spirochetes in the aortic lesions resulted for the most part negatively, so that the positive findings reported by Schmorl, Reuter and Benda were accepted with more or less skepticism in view of the possibilities for error that the degenerated aortic tissues offer to the searcher for spirochetes. However, now that Wright and Richardson[2] have reported the finding of structures morphologically identical with *Spirochæta pallida* in all of five cases of aortitis examined by them, there will be no hesitation in the acceptance of these positive findings by Americans who are familiar with the splendid technic of the Boston laboratory.

All the above findings taken together would seem to prove finally the importance of syphilis in the etiology of the nodular form of aortitis which is so frequently

1. Berl. klin. Wchnschr., 1908, xlv, 2142.
2. Boston Med. and Surg. Jour., 1909, clx, 539.

associated with insufficiency of the aortic valves. Indeed there seem to be relatively few cases of simple aortic insufficiency that are not due to syphilis, especially if we exclude those cases where there is a history of rheumatism. As the Wassermann test seems to have distinct value in indicating the activity of syphilitic lesions, there would seem to be an excellent opportunity for therapeutic advance in the treatment of aortic regurgitation when of syphilitic origin, as most of the uncomplicated cases are shown to be.

RELATION OF HUMAN AND BOVINE TUBERCULOSIS

We are approaching the end of the solution of a problem which for many years has been the subject of bitter controversy and during the past eighteen years has been the object of perhaps more extensive work than any other in medicine. The relation of human and bovine tuberculosis is a question of first importance and deserving the most careful consideration.

The investigations which have led up to the proof of he intercommunicability of the disease in man and cattle may be divided into three periods: first, those taking place before the publication, in 1882, of the discovery of the tubercle bacillus by Koch; second, those occurring between the time of the discovery of the tubercle bacillus and its differentiation into human and bovine types by Theobald Smith in 1896-1898; third, those occurring since the establishment of these two types.

During the first period, it was shown by direct experiment that cattle could, though with difficulty, be infected with tuberculous material of human origin; their resistance to the human virus is so great, however, that it is unlikely that the infection occurs naturally.

Evidence of infection from tuberculous cattle to man could not, of course, be sought experimentally, but numerous observers collected statistics which furnish much circumstantial evidence that not infrequently man is infected with the virus of bovine tuberculosis. Numerous cases were studied in which, among children especially, the disease was in all probability caused by consumption of milk from tuberculous cows. A smaller number of cases, but cases furnishing more conclusive proof, were those in which direct inoculation occurred, as in those cases where tuberculous lesions followed wounds received by veterinarians and butchers while handling tuberculous meat.

The evidence obtained during the second period, that is, after the discovery of the tubercle bacillus, differed but little from the preceding, except that the demonstration of the bacilli made the diagnosis more certain, and its cultivation in pure culture gave a greater value to the direct inoculation experiments in animals. This circumstantial evidence was so convincing that it would doubtless have served to bring about the observance of adequate precautionary measures had it not been for the spirit of controversy which existed.

The discovery of the two types of tubercle bacilli, human and bovine, made possible the solution of the problem. On the basis of this distinction the German commission, the British commission and a number of individuals have proved that bovine tuberculosis is communicable to man. In over 300 cases reported in the literature in which the determination of the variety of bacillus present has been made, bacilli of the bovine type have been found in over 60 cases, a little more than 20 per cent. This can not be taken as representing the true incidence of bovine infection in man, since in some of the series investigated cases were chosen in which it seemed especially probable that the infection was of bovine origin. The results indicate clearly, however, that bovine tuberculosis is a source of danger to man sufficiently great to demand rigorous precautionary measures against it.

To arrive at a more accurate knowledge of the incidence of infection with the bovine type of bacillus in man, a great number of cases of tuberculosis, including the various forms of the disease, must be brought under investigation.

It will be of great interest and importance to see if certain forms of tuberculosis are constantly associated with one or the other type of bacillus. It is already evident that the bovine bacillus rarely, if ever, produces pulmonary tuberculosis. On the other hand, it has been found in a considerable number of cases of cervical adenitis and tabes mesenterica, as well as in other forms of tuberculosis.

The bearing which the type of bacillus present in a given infection will have on the therapeutic treatment of the case is not yet clear. In most of the work which has been done on the immunization of cattle against tuberculosis, living but attenuated cultures of tubercle bacilli of the human type have been used; there have been a few experiments, however, which indicate that vaccinations with attenuated cultures of bovine bacilli are more potent to protect cattle than are the vaccinations with the human bacilli. This fact may become significant in the treatment of human tuberculosis. Although at present there is but little to indicate that tuberculins prepared from the two types of the bacilli differ essentially, yet individuals with tuberculosis who had received one kind of tuberculin over a long period of time without evident benefit sometimes show a definite and progressive improvement when a change is made to tuberculin produced by the other type of bacillus.

Whether this result depends on the type of bacillus present in the infection has not been investigated, nor have we enough evidence to say whether we should use the homologous tuberculin or vaccine or the heterologous ones, but in the present unsatisfactory state of the therapy in tuberculosis, advantage should be taken of these points if any advantage lies in them. Further investigations are required along these lines.

THE ANTITOXIN UNIT AS A MEASURE OF CURATIVE VALUE

While most of the active workers in the field of immunization have believed that the curative value of a serum could be accurately gauged by the number of antitoxin units it contained, there have not been lacking some dissenting voices. As is well known, the content of a serum in diphtheria antitoxin units is determined, as a rule, by mixing measured quantities of the serum with a standard toxin and injecting the mixture, under carefully controlled and uniform conditions, into a guinea-pig of 250 grams weight. The degree of protection afforded by a given serum under this procedure is generally considered to indicate its relative value for curing diphtheria in man. That is to say, if 10 c.c. of 200-unit serum proves efficacious in curing a patient, just one-half the amount, or 5 c.c. of a 400-unit serum should prove equally efficacious.

Roux, Cruveilhier and others were among the first to report findings at variance with this conclusion. According to these observers, the dose of diphtheria antitoxin which has the greatest therapeutic effect is not always the one that contains the greatest number of antitoxic units. If this be true, the inference would seem to be justified that the antitoxin is not the only important preventive and curative substance in the serum. Steinhardt and Banzhaf,[1] on the other hand, after a careful repetition of Cruveilhier's experiments, arrived at diametrically opposite results. They found no evidence that the therapeutic power of a serum was dependent on anything except the number of antitoxin units it contained, and they conclude that the present method of standardizing antidiphtheritic serum accurately measures its therapeutic value.

The question has also been investigated more recently by Kraus[2] of Vienna, who has obtained results similar to those of Roux and Cruveilhier. Kraus studied not only antidiphtheritic serum, but also antidysenteric serum and the antitoxic cholera serum (*el Tor vibrio*). With all of these he found that no fixed relation existed between the amount of antitoxin and the curative value of the antitoxic serums. As a rule, his experiments showed that the "high potency" antidiphtheritic serums (from 300 to 600 units) possessed a relatively lower curative power than those of less antitoxic concentration (from 100 to 150 units). Kraus is inclined to attribute this phenomenon to a difference in the "avidity" of the antitoxin in different serums. In the discussion following Kraus' paper, Kretsz stated that the clinical results with the high potency serums, as he had observed them in a Vienna hospital, were less satisfactory than those with the low potency serums in which, of course, a greater bulk of serum was used. It should be noted that this is contrary to the recorded experience in the New York hospitals and elsewhere in this country.

1. Jour. Inf. Dis., 1908, 5, p. 203.
2. Centralbl. f. Bakt., Beilage zu Abth. I., 42, 1908.

Part of the discrepancy between the conclusions drawn by Kraus and those of Steinhardt and Banzhaf may be explained by the different modes of experimentation employed by these investigators, but that this is the sole factor concerned in bringing about the divergence seems hardly probable. Kraus expresses his conviction that the problem of measuring the curative value of a serum is not solved and that a re-examination of the whole subject is urgently needed.

DISSEMINATION OF FOOT-AND-MOUTH DISEASE BY VACCINE VIRUS

The statement[1] from the Bureau of Animal Industry of the Department of Agriculture in Washington concerning the source of the recent outbreaks of foot-and-mouth disease in Michigan, Pennsylvania and other states is of special interest. A new, hitherto apparently unsuspected source of this disease has been discovered, namely, lymph from vaccine calves. This discovery with its important practical consequences and the whole outcome of the investigation outlined in the statement are highly creditable achievements both to the Bureau of Animal Industry and to the U. S. Public Health and Marine-Hospital Service. The manufacturers in question participated with commendable zeal in carrying out the radical measures instituted by the government in order to rid the market of the unwittingly contaminated vaccine by recalling all the virus on the market.

That the virus of foot-and-mouth disease could exist undiscovered for so long a time in calves used for the production of vaccine virus is not at all incredible in view of the fact that the company from which the original contaminated vaccine came killed its calves so soon as their yield of virus was collected. It was only when the used calves were returned to the market that the infection began to spread.

Discovery of the actual agent of foot-and-mouth disease in contaminated vaccine by any other method than animal experiments is out of the question, because it concerns an agent that is not visible or cultivable by our present methods. Being a filterable virus, that is, passing through filters that hold back ordinary bacteria, it is commonly spoken of as an ultramicroscopic virus. Hence the presence of the virus of foot-and-mouth disease in vaccine lymph can not possibly be detected by the routine methods ordinarily employed to test the purity of vaccine lymph. Under the circumstances it was a matter of good fortune that human beings are relatively but little susceptible to foot-and-mouth disease and apparently not at all when the virus is applied as in vaccination; were it otherwise there surely would have resulted a large number of human cases. As it is, not a single case appears to have developed.

While the cost of this outbreak of foot-and-mouth disease has proved to be no small item, it is a great

1. Miscellany Department in this issue of THE JOURNAL.

satisfaction to know that through efficient governmental agencies has the outbreak not only been definitely overcome, but also that such knowledge has been gained as will prevent future outbreaks from this source.

VALUE OF STATE BOARD STATISTICS

We present this week for the sixth consecutive year tabulated statistics based on examinations conducted by state medical licensing boards during the past year. These statistics appear on pages 1691 to 1713 and are worthy of careful study. The four large tables, A, B, C and D, give the results in detail, while the others are presented to bring out the more important deductions.

These statistics, while they should not be taken alone in passing judgment on any medical school, constitute a very important part in the investigation of medical colleges and throw much light on several factors having to do with medical education. In the lists of medical schools shown in Tables I, J and K, with a very few exceptions, the classification is surprisingly upheld by the extended investigation and inspection of medical colleges made by the Council on Medical Education.

Occasionally a college may be listed in Table I, when in justice it should not appear in the better class of colleges. These apparent discrepancies are due to the character of the state board examinations as they are generally conducted and which can frequently be passed by graduates of colleges which give no laboratory or clinical training. Meanwhile, since we began publishing these data six years ago, some colleges have been able to lower their failure percentages considerably by giving special state board quizzes, without in any way improving their equipment for teaching. These methods of cramming for state examinations, however, will probably be corrected through the adoption of practical tests which are already being required by several boards and which will doubtless soon be generally adopted. That state boards are becoming more careful at their examinations is shown by the increasing percentage of failures from 19.1 per cent. for all candidates in 1904 to 21.7 per cent. in 1908 and by the number of colleges having less than 10 per cent. of failures being reduced from 64 in 1907 to 48 this year.

An important fact drawn from Table B is that over 64 per cent. of the graduates of medical colleges become licensed in the states wherein the colleges are located, and the percentage is really higher for colleges of inferior grade. Thus a state is not only responsible for the existence of any low-grade medical schools, but is itself the recipient of the greater part of the poorly trained graduates of those schools, and the standing of the profession as a whole in those states will be correspondingly impaired.

That seven states together registered 213 undergraduates during 1908 is shown by Table M. The number of such candidates registered will be greatly reduced, however, since three of the states, Alabama, Arkansas and Rhode Island, have recently secured legislation demanding that all candidates be graduates of reputable medical colleges. We urge that these statistics be given a careful study, especially by those who are interested in the problem of medical education and medical licensure.

Thanks are hereby extended to the various licensing and examining boards for their cooperation in the work of compiling these statistics.

Medical News

ARKANSAS

Commencement Exercises.—The thirtieth annual commencement exercises of the Medical Department of the University of Arkansas, Little Rock, were held April 30, when a class of 22 was graduated. The diplomas were awarded by Governor George W. Donaghey, and the address to the graduates was delivered by Rabbi Louis Witt.——The third annual commencement exercises of the College of Physicians and Surgeons were held in Little Rock, April 29, a class of 14 receiving diplomas. The faculty address was by Dr. C. T. Drennen, Hot Springs.

Personal.—Dr. Claude E. Laws, Fort Smith, has been appointed a member of the State (Eclectic) Medical Board, vice Dr. Jacob F. Lewis, Little Rock, resigned.——Dr. Joshua C. Sexton has been elected president, and Dr. Henry E. Thomason, a trustee of the newly-organized antituberculosis society at Siloam Springs.——Dr. Charles A. Archer, DeQueen, has been elected delegate from the Sevier County Medical Society to the state medical society, and Dr. R. H. Hopkins, DeQueen, and Oliver O. Hammonds, DeQueen, were named as alternates.

Society Elections.—Clark County Medical Society, at its annual meeting in Arkadelphia, April 29, elected Dr. E. Kindle Williams, Arkadelphia, president; Dr. John H. Cuffman, Gurdon, secretary-treasurer, and Dr. James C. Wallace, Arkadelphia, delegate to the state society.——Logan County Medical Society, at its meeting in Paris, April 16, elected Dr. Early E. Scott, Magazine, president; Dr. M. E. Foster, Roseville, vice-president; Dr. John S. Shibley, Paris, secretary-treasurer; Dr. Samuel P. McConnell, Booneville, delegate to the state society, and Dr. Will H. Bennett, Paris, alternate.——At the annual meeting of Polk County Medical Society, held in Mena, April 17, the following officers were elected: Dr. Andrew J. Pool, president; Dr. William C. Vandiver, vice-president; Dr. Frank A. Lee, secretary; Dr. Philip R. Watkins, treasurer, and Drs. William P. Parks, Philip R. Watkins, and Columbus C. Gunnels, censors, all of Mena.——At the annual meeting of Conway Medical Society, held in Morrillton, Dr. Frank Gordon, Morrillton, was elected president; Dr. J. F. Halbrook, Cleveland, vice-president; Dr. George W. Ringgold, Morrillton, secretary-treasurer and delegate to the state society.——Howard County Medical Society, at its annual meeting in Nashville, elected the following officers: Dr. William H. Toland, Mineral Springs, president; Dr. David A. Hutchinson, Nashville, vice-president; Dr. Jesse S. Hopkins, Dierks, secretary; Dr. W. M. Gibson, Nashville, delegate to the state society, and Dr. James M. Daly, Nashville, alternate.——At the annual meeting of Boone County Medical Society, held at Harrison, Dr. R. S. Crebs, Olvey, was elected president; Dr. Alfred M. Hatheock, Harrison, vice-president; Dr. J. L. Sims, Harrison, secretary; Dr. Hugh L. Routh, Batavia, treasurer, and Dr. Frank B. Kirby, Harrison, delegate to the state medical society.——At the annual meeting of Garland County Medical Society, held in Hot Springs, April 7, the following officers were elected; Dr. Morgan F. Mount, president; Dr. Elmer H. Ellsworth, vice-president; Dr. John S. Wood, secretary; Dr. Joseph S. Horner, treasurer; Drs. Eugene C. Hay and Randolph Brunson, delegates to the state society, and T. Earl Sanders and Linda H. Barry, alternates, all of Hot Springs.——Independence County Medical Society, at its annual meeting in Batesville, April 5, elected the following officers: Dr. Charles G. Hinkle, Batesville, president; Dr. William T. P. Huddleston, Sulphur Rock, vice-president; Dr. Oscar J. T. Johnston, Floral, secretary-treasurer and alternate delegate to the state society; and Dr. Robinson C. Dorr, Batesville, delegate.

COLORADO

Personal.—Dr. T. Clarkson Taylor has been appointed health officer of Fort Collins.——Dr. Albert W. Rew has been appointed city physician of Fort Collins, vice Dr. Wilbur O. Upson.——Dr. John R. Espey, Trinidad, is said to have been sustained in his contention that Dr. Alfred Freudenthal has

no right to practice independently in Trinidad until after the expiration of the contract made that he would not so practice for five years, the life of the contract. Dr. Espey had previously obtained a favorable decision in the district court.

Sanatoria Unite.—The Swedish American Sanatorium Association at Edgewater has united with the Swedish Consumptive Sanatorium at Englewood to form the Swedish National Sanatorium for Tuberculosis. The present capacity of the institution is 50. It is expected that 25 cottages for individual patients will be added during the year. About one-third of the patients are treated without charge and the institution is supported by contributions of Swedish people throughout the country. Dr. Charles A. Bundsen, Denver, is chief medical adviser.

GEORGIA

State Board Election.—The State Board of Medical Examiners, on May 4, elected the following officers: President, Dr. Isham H. Goss, Athens; vice-president, Dr. Samuel S. Gaulden, Quitman, and secretary, Dr. Edwin R. Anthony, Griffin.

Griffin Hospital.—At the annual meeting of the Griffin Hospital Association, April 30, it was recommended to install a steam heating apparatus to cost $800, to make additions and repairs to the main building to cost $1,500, and to add a colored ward to cost $700.

Tuberculosis Exhibit.—The tuberculosis exhibit was opened to the public of Atlanta at the Central Congregational Church, April 12. At the opening session, five governors of the state were on the platform.——The exhibit of the National Association for the Study and Prevention of Tuberculosis was opened in Augusta, April 30.

Sale of Narcotics Restricted.—At a meeting of the State Board of Pharmacy, a ruling was made that after thirty days the dispensing of drugs containing narcotics shall be allowed only on the prescription of a physician. Dr. T. A. Cheatham, state drug inspector, announces that he will vigorously prosecute all violators of the law.

IDAHO

Personal.—Dr. William A. Wright, Pocatello, has been appointed surgeon-general of Idaho, with the rank of colonel. ——Dr. Charles C. Phillips, Lewiston, who has been seriously ill with kidney disease, is reported to be improving.

State Board Election.—The newly-elected officers of the State Board of Medical Examiners are Dr. Ira R. Woodward, Fayette, president; Dr. Susan E. Bruce, Lewiston, vice-president, and Dr. William F. Howard, Pocatello, secretary-treasurer.

New Medical Society.—Twin Falls County Medical Society has been organized with the following officers: President, Dr. D. C. Weaver, Twin Falls; vice-president, Dr. A. F. McClusky, Buhl, and secretary-treasurer, Dr. F. F. Benoit, Twin Falls.

Oppose Removal of School.—Physicians of Boise advance convincing arguments against the change of the location of the School for Deaf, Dumb and Blind from Boise. Boise is said to be the most logical location for the school, which should be at a point where means are at hand for the conservation of health and where the unfortunate children may be familiarized with the traffic of a city for their future protection.

ILLINOIS

New Society Organized.—Bond County Medical Society was organized at Greenville, May 4, by Dr. J. Leaming Wiggins, East St. Louis, vice-president of the Illinois State Medical Society, and Dr. Charles W. Lillie, East St. Louis, with a charter membership of 15.

Patients to Construct Hospital.—The labor of patients will, it is announced, be used largely in the construction of the new buildings of the Illinois Northern Hospital for the Insane, Elgin, this year. Dr. George N. Lucas, of the hospital staff, has been placed in charge of the construction work. The first undertaking will be the construction of a general bath house and swimming tank for patients; the second, the erection of a hospital for the acute insane, to cost $35,000.

District Society Meeting.—At the thirty-third annual meeting of the Brainerd District Medical Society, held in Lincoln in joint session with the Fifth Councilor District Society, the following officers were elected: President, Dr. Don W. Deal, Springfield; vice-presidents, Drs. John W. Bozarth, Mount Pulaski; Chauncey W. Cargill, Mason City, and Carl H. E. E. Rembe, Lincoln; secretary, Dr. Harry S. Oyler, Lincoln; treasurer, Dr. Charles C. Reed, Lincoln; councilor, Dr. J. Whitefield Smith, Bloomington, and censors, Drs. Albert L. Brittin, Athens; Irving Newcomer, Petersburg, and Albert E. Campbell, Clinton.

Chicago

Bequest to Hospital.—By the will of Otho S. A. Sprague, who died February 12, in Pasadena, a bequest of $20,000 is made to the Presbyterian Hospital of Chicago.

Physicians' Club Elects.—At the annual meeting of the Physicians' Club, May 14, Dr. George E. Baxter was elected secretary, vice Dr. Edwin B. Tuteur, and Drs. Frank Billings, Henry T. Byford, William Cuthbertson, Henry B. Favill, Charles L. Mix and Edwin B. Tuteur were elected directors.

Personal.—Dr. Otto T. Freer has been elected a corresponding member of the Danish Oto-Laryngological Society in recognition of his work in rhinology and laryngology, and in appreciation of his operative demonstrations in Copenhagen last summer.——Dr. G. Paull Marquis leaves for Europe May 24.

INDIANA

Standard Medical Case for Trains.—Superintendents and chief surgeons of almost every railway operating in Indiana met the railroad commissioners April 27, and discussed a uniform type of medical case to be made a part of the equipment of every car. The law requires that each medical case shall contain two gauze bandages, two triangular pieces of gauze eighteen inches wide, and one pound of absorbent cotton.

Society Meetings.—At the annual meeting of the Twelfth Councilor District Medical Society, held in Fort Wayne, May 4, the following officers were elected: President, Dr. Edmund M. VanBuskirk, Fort Wayne; vice-presidents, Drs. Walter F. Carver, Albion, and Willard W. Swartz, Auburn; secretary, Dr. John H. Gilpin, Fort Wayne, and treasurer, Dr. David C. Wybourn, Sheldon. Dr. Kent K. Wheelock, Fort Wayne, was recommended for district councilor.——The physicians of Boonville have organized a local medical society with Dr. Walter P. Robinson, president, and Dr. William P. Ford, secretary.——The annual meeting of the Third District Medical Society was held in Mitchell April 30. Dr. Elihu P. Easley, New Albany, was elected president, and Dr. James B. Duncan, Bedford, vice-president. Jasper was selected as next place of meeting.

IOWA

Convicted for Unlicensed Practice.—James E. Myers, Lansing, is said to have been convicted of practicing medicine without a state certificate at the present session of the district court, Waukon.

New Hospital.—A new general hospital, known as the City Park Hospital, has been opened at Mason City. It has accommodation for 25 patients and a training school. The directors are Drs. Charles L. Marston, Clarence M. Swale, William E. Long, C. Freeman Starr and Fred Albert.

Alumni Reunion.—The third annual alumni reunion and clinic of the alumni of the College of Medicine of the University of Iowa was held April 27 and 28, with 218 in attendance. Dr. James E. Conn, Ida Grove, was elected president of the association, and Dr. Clarence E. Van Epps, Iowa City, secretary-treasurer.

Personal.—Dr. Charles M. Harrington, Knoxville, who has been ill, was taken to Mercy Hospital, Des Moines, to be operated on for appendicitis April 19.——Dr. J. Arthur W. Burgess, Iowa Falls, is reported to be in a critical condition from septicemia.——Dr. Norman W. Knepper, Collins, was shot in the breast by his wayward son and seriously wounded April 23.——Dr. Charles Palen has been reappointed city physician of Dubuque.

KANSAS

Individual Drinking Cups.—All common drinking cups in trains, depots and schools are to be abolished by order of the State Board of Health, September 1, as a menace to health.

New Graduates.—The nineteenth annual commencement of the Kansas Medical College, Medical Department of Washburn University, Topeka, was held April 28, when a class of 17 was graduated. The honorary degree of M.D. was conferred on Dr. Charles F. Menninger, a member of the faculty of the school. Dr. William S. Lindsay, retiring dean of the school, acted as master of ceremonies, and the degrees were conferred by President Frank Sanders of Washburn University.

KENTUCKY

Personal.—Dr. E. H. Gary has been appointed assistant city chemist and dairy expert, Louisville, vice Dr. Letchworth Smith, deceased.——Dr. Sara T. Mayo and Edith Loeber have recently joined the clinical staff of the Antituberculosis

League of Louisville.——Dr. Diekran H. Eskiletian, Hopkinsville, has gone to Armenia to visit his parents.

Southwestern Physicians Elect Officers.—At the thirty-ninth annual meeting of the Southwestern Kentucky Medical Association, held May 11 and 12 in Paducah, the following officers were elected: President, Dr. William L. Mosby, Bardwell; vice-presidents, Drs. John S. Davis, Lovelaceville, and William W. Richmond, Clinton; secretary, Dr. Charles E. Purcell, Paducah (re-elected); treasurer, Dr. Charles H. Brothers, Paducah, and historian, Dr. Robert T. Hocker, Arlington. Benton was selected as the next meeting place.

Antituberculosis Association.—At the annual meeting of the Louisville Antituberculosis Association, April 12, Drs. Samuel A. Hartwell, Jr., Dunning S. Wilson, Frank C. Wilson and Jacob A. Flexner were elected directors, and Drs. D. S. Wilson and Flexner were made members of the executive committee.——It is planned that some time within the month 5,000 women from churches and social organizations of Louisville will start out for a period of two hours' work, to consist of visiting every house in the block in which the visitor lives, and requesting from every person in that block ten cents for furtherance of the antituberculosis movement.——Dr. Dunning S. Wilson of the Louisville Antituberculosis Society delivered a lecture in Henderson May 5 on "The Prevention and Cure of Tuberculosis."

MARYLAND

County Medical Society.—At the annual meeting of Cecil County Medical Society, held at Elkton, May 1, the following officers were elected: President, Dr. Camillus P. Carrico, Cherry Hill; vice-president, Dr. Jesse J. Wright, Warwick; secretary-treasurer, Dr. Howard Bratton, Elkton; censor, Dr. Henry A. Mitchell, Elkton; and delegate to the state society, Dr. John H. Jamar, Elkton.

Against Tuberculosis.—The Social Service League, recently organized at Rockville, has made arrangements for meetings in various parts of Montgomery county, at which addresses on "Tuberculosis" will be delivered. The Montgomery County Medical Society has endorsed the work and offered to cooperate actively in it, and the trustees of the county almshouse have agreed to set aside a portion of the building for the treatment of consumptive patients.

Baltimore

Dinner to Faculty President.—Dr. Howard A. Kelly gave a dinner in honor of Dr. Brice W. Goldsborough, Cambridge, president of the Medical and Chirurgical Faculty of Maryland, at the Maryland Club May 12.

Memorial Year Book.—*The Clinic*, the year book of the graduating class of the College of Physicians and Surgeons, is dedicated to the memory of the late Prof. Isaac Ridgeway Trimble, professor of anatomy in that institution. A tribute is also given to the late Dr. George J. Preston in a poem of eulogy.

Personal.—Dr. J. Albert Chatard has been elected president of the French Benevolent Society.——Dr. E. Linden Mellus is in France.——Dr. William S. Thayer will sail for Europe the end of this month.——Dr. Robert S. Kirk has been elected superintendent, and Dr. John Roth assistant superintendent of the Baltimore Eastern Dispensary.

MICHIGAN

Personal.—Dr. Perry Schurtz has been made president of the Grand Rapids Board of Health.——The Gratiot County Medical Society announces that its meeting May 28, will be in honor of Dr. William D. Scott, Ithaca, one of the oldest practitioners of the county, at which a loving-cup will be presented to Dr. Scott by Dr. Stiles Kennedy, St. Louis.

Governor Signs Tuberculosis Bill.—Governor Warner, on April 27, signed the bill which makes it the duty of physicians to report to their local boards of health within twenty-four hours every case of tuberculosis which comes to their knowledge; imposes on health officers the duty of making quarterly reports in detail of these cases to the State Board of Health, and provides that owners of apartments and houses must notify the local authorities when tuberculosis patients die or move from their premises, that they may be disinfected in accordance with the regulations of the board.

MISSOURI

More Power for Board of Health.—The senate on April 21 passed a bill prohibiting physicians, whose licenses have been revoked by the State Board of Health, from practicing, pending the decision of the Circuit Court in a case taken on writ of certiorari

Graduation Exercises.—The annual graduation exercises of the Barnes Medical College, St. Louis, were held at the Odeon May 14, when a class of 26 was graduated. The annual banquet of the alumni association of the college was held at Hotel Jefferson, May 12, Dr. E. A. Bernius, vice-dean of the college, presiding as toastmaster.

Boisliniere Memorial Fund.—The St. Louis Medical Library Association has assumed trusteeship of the Boisliniere memorial fund, which now amounts to $1,000, the income from which is to be expended in purchasing periodical literature, bearing on the subjects of obstetrics and gynecology, in which special branches the late Dr. Boisliniere was a distinguished practitioner.

Optometry Bill Defeated.—The legislature has refused to consider the bill introduced by opticians, providing for the creation of a board of examiners in optometry. The defeat was accomplished through the energetic work of the physicians of the state and the active cooperation of Mr. Theodore Haggenow, a druggist of St. Louis, a member of the committee to whom the bill was referred for recommendation.

Recommendations for Health of St. Joseph.—The health department of St. Joseph has recommended that the city construct an emergency hospital, establish an outdoor ward for tuberculous patients, provide for the care of scarlet fever and diphtheria occurring in hotels, boarding houses, etc., establish inspection of the sanitary conditions and sources of milk supply, and inaugurate medical inspection of public schools.

Vital Statistics Bill.—A bill providing for the collection of vital mortuary statistics has passed the legislature, and is now ready for the governor's signature. It is in accordance with the bill drafted by the committee on legislation of the American Medical Association; and when made a law will place Missouri in the list of states recognized by the United States census department as having adequate state registration for vital statistics.

Society Meetings.—The annual meeting of the Southwest Missouri Medical Society was held in Springfield May 6 and 7, and the following officers were elected: Dr. C. A. Moore, Springfield, president; Drs. William J. Rabenau, Fordland, and O. N. Cotter, Republic, vice-presidents; Dr. Herbert S. Hill, Springfield, secretary (reelected); and Dr. Lee Cox, Springfield, treasurer (reelected).——At the annual meeting of the Southeastern Medical Association, held in Farmington, Charleston was selected as the next place of meeting. The following officers were elected: President, Dr. Barnard W. Hays, Jackson; vice-president, Dr. Charles R. Fleming, Farmington; corresponding secretary, Dr. Thomas C. Allen, Bernie; recording secretary, Dr. Hutton, Chaffee, and treasurer, Dr. William R. Goodykoontz, Caledonia.

MISSISSIPPI

Convicted and Sentence Suspended.—H. A. Thigpen pleaded guilty in circuit court at Laurel to practicing medicine without a license, and is said to have been fined $25 and costs and, in addition, to have been given a jail sentence of six months, the latter being suspended so long as the defendant desists from practice.

College Commencement.—The third annual commencement exercises of the Mississippi Medical College, Meridian, were held April 30, when a class of 16 was graduated. President, Dr. William W. Hamilton, Meridian, gave a brief history of the college, the doctorate address was delivered by Dr. R. A. Venable, and the diplomas were presented by Rev. J. E. Jones, president of the board of trustees.

Faculty Elected.—Preliminary to the closing of the fiscal year of the Mississippi Medical College, Meridian, the following faculty was elected: Dr. Nathan L. Clark, professor of medicine; Dr. William W. Hamilton, professor of obstetrics; Dr. T. Alexander Barber, professor of diseases of the eye, ear, nose and throat; Dr. Samuel H. Hairston, professor of histology and bacteriology; Dr. Montague J. Lowry, professor of surgery; Dr. Edward E. Robinson, professor of gynecology; Dr. Jefferson W. Anderson, professor of physiology and hygiene; Dr. William W. Reynolds, professor of anatomy; Dr. Thomas J. Houston, professor of genitourinary diseases, and physical diagnosis; Dr. John R. Tackett, professor of clinical medicine; Dr. Henry S. Gully, professor of clinical surgery; Dr. James Bennett, professor of materia medica and therapeutics; Dr. J. H. Phillips, professor of oral hygiene and dental prophylaxis; Dr. James McQ. Buchanan, professor of mental and nervous diseases; Dr. Charles P. Mosby, adjunct professor of diseases of the eye, ear, nose and throat; Dr. Thomas E. Royals, professor of pediatrics; Dr. A. W. Pigford, demonstrator of anatomy; and Hon. A. S. Bozeman, pro-

fessor of medical jurisprudence. The faculty then met and elected the following officers: Dr. Montague J. Lowry, president; Dr. T. Alexander Barber, dean; Dr. Nathan L. Clark, vice-president, and Dr. John R. Tackett, treasurer.

NEW JERSEY

State Society to Meet.—The Medical Society of New Jersey will hold its annual meeting at Cape May, June 23-25.

Society Meetings.—At the annual meeting of Mercer County Medical Society, held in Trenton, May 11, the following officers were elected: President, Dr. Charles H. Mitchell; vice-president, Dr. Gustave A. Schoening; secretary, Dr. Edgar L. West; treasurer, Dr. Iranaeus M. Shepherd; recorder, Dr. Charles J. Craythorn, and delegates to the state medical society, Drs. William S. Lalor, George N. J. Sommers, and Paul L. Cort, all of Trenton.——Salem County Medical Society, at its annual meeting, held in Salem, May 5, elected the following officers: President, Dr. John M. Summerill, Penn Grove; vice-president, Dr. George W. Fitch, Daretown; secretary-treasurer, Dr. Henry Chavanne, Salem; reporter, Dr. John F. Smith, Salem; censors, Drs. William H. James, Pennsville, Frank B. Harris, Canton, and Richard M. Davis, Salem, and delegates to the state medical society, Eugene E. DeGrofft, Woodstown, and Lester H. Hummel, Salem.

NEW YORK

Site for Insane Hospital Again Opposed.—It is announced that the State Commission in Lunacy had chosen a new site for the proposed asylum at Farmington, L. I. With the announcement that an offer for property had been accepted, the same opposition that was raised in connection with the Grenvale purchase is met. The citizens of Farmington in a mass meeting filed a protest with the governor, the senator, assemblymen, and lunacy commission, against the location of a hospital for the insane at or near the village.

Bills Signed.—Governor Hughes has signed the following bills: Senator Platt's, providing that any person knowingly bringing a domestic animal suffering from an infectious or contagious disease into the state shall be liable to all damages caused by the spreading of such disease; Senator Raines', relative to quarantine for rabies, posting notices and providing a penalty for destroying such notices while they are in force; Representative Shea's, providing that the state shall pay 50 per cent. of the appraised value of an animal condemned for glanders; Representative Boshart's, giving the chief veterinarian of the State Department of Agriculture the same authority to quarantine on account of contagious diseases, as is now held by the assistant commissioners, and also providing for a more stringent labeling of articles termed in the agricultural law "concentrated commercial feeding stuffs," and Senator Newcomb's, rearranging the control of infectious and contagious disease hospitals in New York City as between the various city departments devoted to this work.

New York City

New Training School Opened.—The formal opening exercises of the New Bellevue Training School for Nurses were held April 28. The building is located between East Twenty-fifth and Twenty-sixth streets, and cost about $1,000,000.

Hospital Suspends.—The Brooklyn Memorial Hospital for Women and Children has been closed because the work of the institution has been so seriously handicapped by the lack of facilities. Arrangements are being made for the erection of a new structure which it is hoped may be erected in two years. The Memorial Dispensary which has been connected with the hospital has been removed to Sterling Place.

To Help the Blind.—The New York Association for the Blind recently gave a benefit at the Hippodrome where between five and six thousand dollars was raised. In connection with the entertainment was an exhibition demonstrating the various kinds of work that could be done by the blind. The association asks $100,000 as a permanent fund to carry on its work and already has $85,000 pledged on condition that the remaining $15,000 be raised.

Enlarge City Hospital.—Plans have been filed for the erection of a two-story and attic pathologic laboratory building as an annex to the Metropolitan Hospital, Blackwell's Island. The main floor will contain the offices, the museum and specimen room and a room for autopsies; the second floor will be fitted as a library and with laboratories for microscopical, chemical and bacteriological research, and also a special private laboratory for the surgeons and the attic will be fitted as a menagerie for animals for experimental use. The structure will cost $40,000.

United Hebrew Charities May Get Million.—The $1,000,000 left to the United Hebrew Charities on condition that an agency should make collections for the six charities and that the funds should be distributed among them by Louis A. Heinsheimer, is still in the hands of Alfred M. Heinsheimer, as several of the institutions refused to accept the terms of the will. A meeting was recently held at which a thorough canvass of the situation was made and a resolution was passed calling for the appointment of a committee to consist of one person from each of the six institutions and each of these to choose three additional persons. The testator desired this plan of cooperation in order to reduce the expenses of collection.

NORTH DAKOTA

County Medical Society Organized.—The Richland County Medical Society was organized at Wahpeton May 3. Dr. Martin W. Ivers, Abercrombie, was elected president; Dr. Robert H. Devine, Wahpeton, vice-president; Dr. Timothy O'Brien, Wahpeton, secretary; Dr. Louis W. Meekstroth, Wahpeton, treasurer, and Dr. Charles P. Spottswood, Hankinson, censor.

State Association Meeting.—The annual meeting of the North Dakota Medical Association was held in Fargo, May 11 and 12. The following officers were elected: President, Dr. John E. Countryman, Grafton; vice-presidents, Drs. Henry H. Healy, Grand Forks; N. Oliver Ramstad, Bismarck, and Louis W. Meckstroth, Wahpeton; secretary, Dr. Hezekiah J. Rowe, Casselton (reelected); treasurer, Dr. J. Dempsey Taylor, Minot (reelected); delegate to the American Medical Association, Dr. Victor H. Stickney, Dickinson; alternate, Dr. Zella W. Stewart, Grand Forks, and councilors, Drs. P. J. Artz, Jamestown; Charles McLachlan, New Rockford; R. W. Pence, Minot, and Edgar A. Pray, Valley City. Grand Forks was chosen as meeting place for 1910.

OHIO

Will Not Prescribe Liquor.—The Wyandot County Medical Society, at its meeting April 29, adopted a resolution that its members refuse to furnish prescriptions for intoxicating liquors until, after having made a personal examination of each patient, it is deemed that the stimulant is necessary.

Sanatorium Dedicated.—On May 1, the Brookside Sanatorium, Dayton, was formally presented to the local tuberculosis society by E. B. Markey, who, in his address, dedicated the institution to the cause of bettering the condition of unfortunate consumptives. Rev. William A. Hale delivered an address on the "Great Cause of Tuberculosis." The sanatorium is located within six miles north of Dayton, and the buildings consist of a two-story brick house, and several structures erected on plans approved by the International Tuberculosis Congress.

Cincinnati

Fresh Air Society.—At the annual meeting of the Fresh Air Society it was announced that the society expected to care for from 2,000 to 3,000 on its farm near Terrace Park, during the coming season, and a plea was made for funds for this purpose, for the painting of cottages, fitting up the dining room, and constructing cement walks, for all of which $1,100 is needed.

New Plans for Interne Examination.—A new plan for the examination of internes has been adopted in Cicinnati. Four hospitals consented to hold a single examination under the auspices of the staff of the Cincinnati Hospital, the successful candidates being allowed to select the hospital in which they prefer to serve, the selection to be made in order of rank. There were 23 who passed the examination, but as there were only 20 positions to fill, 3 will act as alternates.

PENNSYLVANIA

Personal.—Dr. and Mrs. William G. Miller, New Castle, will sail for Germany early in June.——Dr. Ernest L. Clark has been elected president of the Media Free Library Association.

Appropriations Cut.—Governor Stuart reduced in general the appropriations to the state and semi-state institutions recommended by the legislature. The appropriations to these institutions, however, are higher than they were two years ago.

Food Bill Approved.—Governor Stuart approved the Todd-Murphy Food Bill, May 13. The act is now in force, previous conflicting statutes being repealed thereby. This act permits the use of benzoate of soda and sulphur dioxid as preservatives. A long list of preservatives is forbidden by the act,

V 19

including boron compounds, pyroligneous acid, salicylic acid, formaldehyd, sulphate of copper, alum and many others.

Portrait of Dr. Agnew Unveiled.—On May 13, a portrait of the late Dr. D. Hayes Agnew was unveiled at Mercersburg Academy. The members of the Franklin County Historical Society and the medical societies of Mercersburg, Chambersburg and other towns in Franklin county attended the ceremony. The address was delivered by Dr. J. William White, professor of surgery in the University of Pennsylvania.

Tuberculosis Society Directors Elected.—At the annual meeting of the Pennsylvania Society for the Prevention of Tuberculosis, held in Philadelphia April 14, the following directors were elected: Drs. Howard S. Anders, Frank A. Craig, J. Clinton Foltz, Albert P. Francine, C. Lincoln Furbush, William D. Robinson, Jr., William C. White, T. Mellor Tyson, J. Willoughby Irwin, Henry D. Jump, and J. Gurney Taylor, Philadelphia, and Dr. Charles H. Miner, Wilkesbarre.

Bill Vetoed.—Governor Stuart has vetoed the Blewitt bill, which requires all state or other hospitals in the state receiving annual appropriations from the state to furnish to sick or injured firemen, either permanent or volunteer, caused by exposure or accident while in the performance of their duties, a private room or rooms, together with all medical attention, board and supplies, free of charge. The Governor said that there appears to be no occasion for such legislation, and that therefore the act is not approved.

Philadelphia

City to Give Milk to Babies.—The Department of Health and Charities is prepared to distribute free milk and ice to babies during the hot months of the summer. This is the first time that the city has undertaken to supply milk to the children of the poor.

Health Bureau Chief Resigns.—Dr. Alexander C. Abbott, chief of the bureau of health, has resigned his position to take effect June 1. He will devote his time to his work at the University of Pennsylvania and will have charge of the laboratory of hygiene and physiology.

Educational Tuberculosis Exhibition.—An educational tuberculosis exhibition by the Pennsylvania Society for the Prevention of Tuberculosis, was opened in the Auditorium of the Kensington Young Men's Christian Association, May 17, and will remain five days. Demonstrations are being given each day and preventive measures for combating the disease are being outlined.

Lectures to Mothers.—At a conference, May 13, between the Director of Public Health and Charities, and Mrs. Frederick Schoff, president of the Mothers' Congress, arrangements were made for a series of lectures to mothers on the care and treatment of infants. The lectures will be delivered in the public schoolhouses after school hours by the assistant medical inspectors and nurses connected with the health bureau.

WASHINGTON

First-Aid Equipment for Schools.—The Seattle board of education has ordered that first-aid cases, blankets and hot-water bottles be installed in all school buildings having domestic science departments. The cost of this equipment will be a little less than $600.

Hospital Notes.—Work will soon commence on the hospital to be erected by the Sisters of Charity between Jefferson and James streets and Seventeenth and Eighteenth avenues, Seattle. The building will be of steel brick and concrete construction, six stories in height, and will cost about $250,000. ——Physicians of Bremerton have raised $1,100 by popular subscription to purchase a site for a hospital for Kitsap county. The building proposed will cost about $7,000.——Plans for a three-story addition to the Hoquiam General Hospital to cost about $10,000, have been prepared, and construction work will soon be begun.——The Emergency Hospital, Seattle, on the fourth floor of the new Municipal Building, was officially opened March 31, when 19 patients were transferred to the hospital. About $125,000 has been spent on the new hospital, which is under the direction of Dr. James E. Crichton, commissioner of health, assisted by Drs. Frank S. Bourns and Inslee B. Greene.

WISCONSIN

Home for Consumptives.—Plans are being made in Milwaukee for the construction of an isolation hospital for consumptives at Wauwatosa, on a site purchased three years ago for $32,000. The principal building on the ground will be remodeled to conform to the modern ideas of open-air treatment, and eventually smaller cottages will be erected for the use of patients.

Personal.—Dr. Adelbert Schneider, Milwaukee, has returned from Europe.——Dr. Lawrence P. Mayer, Hudson, is seriously ill with septic pneumonia.——Dr. A. D. McKinley has resigned as house surgeon at the Johnston Emergency Hospital, Milwaukee, to become superintendent of the Fox Lake Sanitarium.——Dr. James W. St. John, Janesville, has been appointed fire and police commissioner.

GENERAL NEWS AND COMMENT

Vanderbilt Alumni Meet.—The alumni of Vanderbilt University Medical Department, Nashville, Tenn., will have their headquarters at Young's Hotel at Atlantic City during the meeting of the American Medical Association, and on June 8 a banquet will be given at the hotel at 8 p. m.

Meeting of Milk Commissions.—The third annual meeting of the American Association of Medical Milk Commissions will be held June 7, at the St. Charles Hotel, Atlantic City. The association now has a membership of 48 milk commissions. Proceedings of the 1908 session will be mailed in a few days.

Internists Elect.—At the annual meeting of the Association of American Physicians, held in Washington May 11 and 12, the following officers were elected: Dr. Henry Hun, Albany, N. Y., president; Dr. Frederick Forchheimer, Cincinnati, vice-president; Dr. George M. Kober, Washington, secretary; Dr. Solomon Solis Cohen, Philadelphia, recording secretary; Dr. J. P. Crozer Griffith, Philadelphia, treasurer, and Dr. Henry Sewell, Denver, councilor.

Gastro-Enterological Meeting.—The twelfth annual meeting of the American Gastro-Enterological Association will be held at Atlantic City at the Hotel Windsor, June 7 and 8. The addresss of the president, Dr. Julius Friedenwald, Baltimore, will be on the "Development of Gastrology," and in the evening of the first day a symposium on "Gastro-Enterostomy," participated in by Drs. W. B. Cannon, Fred T. Murphy, and Franklin W. White, Boston, Henry W. Bettmann, Cincinnati, and John M. T. Finney, Baltimore.

Laryngologists to Meet.—The thirty-first annual congress of the American Laryngological Association will be held in Harvard Medical School, Boston, May 31 to June 2, under the presidency of Dr. Algernon Coolidge, Jr., Boston. The entertainment includes a luncheon given by the Boston members to the fellows and their ladies and the president's reception on the first day; a luncheon given by the Boston members of the American Otological Society and the American Laryngological Association to visiting fellows and the annual dinner on the second day. On the third day the Otological Society and Laryngological Association discuss nasal and pharyngeal conditions as causative factors in aural diseases.

The Carroll Fund.—The following subscriptions have been received since the last report:

From Medical Officers of the Army	$ 20.00
Dr. F. W. Taylor, Paauilo, Hawaii	5.00
Medical Society, Sioux County, Iowa	11.00
Dr. A. de Bey, Orange City, Iowa.	
Dr. G. A. F. de Lespinasse, Orange City.	
Dr. C. de Jong, Orange City.	
Dr. A. L. Druet, Boyden, Iowa.	
Dr. N. G. O. Coad, Hull, Iowa.	
Dr. D. J. Gleusteen, Alton, Iowa.	
Dr. G. Marris, Hull, Iowa.	
Dr. F. L. McAllister, Hawarden, Iowa.	
Dr. C. S. McCarthy, Hawarden, Iowa.	
Dr. R. D. Oggel, Maurice, Iowa.	
Dr. D. J. Werkman, Secretary, Hull, Iowa.	
Kansas State Medical Society, Columbus, Kansas	55.50
Dr. A. W. Hewlett, Ann Arbor, Mich.	5.00
Dr. Alex. C. Soper, Jr., Chicago	5.00
Dr. J. H. Carstens, Detroit	5.00
Ohio State Medical Society, Columbus, Ohio	112.00
Denver County Medical Society, Denver	35.00
Physicians Round Table of the Chicago Athletic Club,	20.00
	$ 273.00
Previously acknowledged	3,825.65
Total	$4,098.65

The sum of $3,326.50 is still needed to raise the mortgage on this property. Remittances should be sent to Major Ireland, care Surgeon-General's Office, War Dept., Washington, D. C.

Tropical Medicine.—The Far Eastern Association of Tropical Medicine will meet in Manila, P. I., March 6-14, 1910. The session will open at Manila. On the second day protozoology and helminthology will be considered; on the third day, cholera, plague and leprosy; on the fourth day, surgery, obstetrics and diseases of children; on the fifth day, fevers in the tropics, including malaria, typhoid, etc.; on the sixth day, dysenteries and beriberi; on the seventh day, the association will go to Baguio, Benguet, the summer capital of the Philippines, where tuberculosis, climate, hygiene and sanitation will be discussed,

and the business session will be held. Dr. Paul C. Freer, Manila, president of the association, is anxious to have a number present from the United States in addition to the contingent from the far East, and suggests that any who are intending to make a tour of the world eastward, to so plan their routes as to arrive at Manila in March, the best season, thus having January and February, the best months in the year for India.

FOREIGN

Prizes Offered by the Spanish Academy of Medicine.—The Academy of Medicine at Madrid offers a prize of $150 and a gold medal for the best works received on "Heart Failure" and "Infant Feeding." The works must be in Spanish, French or Latin, and be sent in anonymously before June 30, 1910. The secretary is D. M. Iglesias, Calle Mayor 6, Madrid, Spain. Among the other prizes offered are two for the best description of some epidemic in Spain which the writers have passed through, citing cases, treatment, etc., with a certificate signed by the *alcalde* or priest as to the writers' professional zeal and devotion during the epidemic. The Rubio prize of $240 is to be awarded for the most important work or discovery by a Spanish physician during the preceding two years.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, May 8, 1909.

Bequest for Surgeons Who Contract Blood Poisoning in Operating

Mr. George Smith, a dental surgeon of Newent, Gloucester, who died at the age of 77, made a novel bequest. He left the residue of his estate, valued at $58,000, after payment of certain legacies to the Royal Infirmary, Manchester, and University College Hospital, London, in equal shares, to be used for the benefit of the members of the surgical or dental staff who may be disabled by infection from puncture or who may contract blood poisoning while examining or operating on patients or making postmortem examinations.

Bequest for a Hospital Free from Socialist and Religious Control

A surgeon, Mr. John Kershaw, F.R.C.S., of St. Anne's-on-Sea, Lancashire, has left $250,000 for the erection and maintenance of a hospital on his Sunfield estate at Royton, a cotton district in Lancashire. The hospital is to be absolutely free to all who seek treatment. No inquiry is to be permitted as to the means or religious belief of the applicants and no minister of religion nor any socialist is to be an officer of the hospital.

Early Diagnosis of Cancer of the Uterus

At the 1907 annual meeting of the British Medical Association the Section of Obstetrics and Gynecology adopted a resolution requesting the council to appoint a committee to consider the best means of disseminating knowledge of the importance of the early recognition of cancer of the uterus. The committee presented a report which was considered and generally approved by the same section in 1908. At a meeting held on April 28 last the council approved of an appeal to doctors, midwives and nurses to promote the earlier recognition of uterine cancer and directed that this should be communicated to British and colonial medical and nursing journals. The appeal is a lengthy document in which the early diagnosis of the disease is minutely discussed. Its curability by operation in the early stage is emphasized. It is pointed out that the early symptoms are irregular bleeding of any description, even if only in traces—bleeding postcoitum and watery, blood-tinged discharge. There may be no loss of strength or other symptom.

Sir Almroth Wright on Immunization Against Disease

Sir Almroth Wright was entertained at a dinner given in his honor by the Authors' Club, where he delivered an address on "Immunization Against Disease," which was listened to with great interest by a distinguished audience. He contended that our civilization was by no means as complete as we were wont to think. We had not yet come to appreciate the rôle of bacteria, which were among the newly discovered things of the world. We thought we had conquered them by our sanitation, but we had only been fighting against a small portion of them. We had got the better of smallpox, typhoid and dysentery, which now killed very few people in England. But the most serious ills of life now produced by bacteria were not epidemic diseases, but chronic diseases. Everybody was the subject of, or was going to be the subject of, bacterial disease. These forces would have to be got under control before we could consider our civilization complete. The triumphs of antiseptic surgery were great, but no drug had been discovered capable of killing microbes in the interior of the body. The modern method of immunization began with inoculation against smallpox, which was superseded by the discovery of vaccination. Pasteur devoted his life to the extension of this discovery—immunizing against disease. His name would be associated with prophylactic and phylactic inoculation. The next step was comparatively small. Given a localized disease, such as a boil, by phylactic inoculation, Sir Almroth had found that he could stir up the machinery of immunization and so cure it. Gradually he had applied this principle to other diseases. His conclusion was that given a localized disease and knowing the infective organism, immunization by a vaccine was always possible. In Sir Almroth's opinion, that would ultimately be the treatment of bacterial disease.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, May 6, 1909.

The Reform of Instruction Question

The Association of Members of the Teaching Corps of the Faculties of Medicine, whose foundation I chronicled in a previous letter (THE JOURNAL, April 10, 1909, p. 1192), at its first general assembly occupied itself with the question of the *agrégation*. The assembly discussed the question whether the test of admissibility should be by examination or by *concours*. The second solution (*concours*) was decided on by 156 votes against the 52 cast for the project of an examination conferring certificates. The assembly endorsed the position taken in the report of Professor Grasset of Montpellier, viz.: 1, that the admissibility, instead of being a degree or a definitive title, consisted only in a temporary right to the *concours*, limited to the three *concours* following the admission; 2, that the admissibility confers on those who have obtained it no other privilege than that of presenting themselves at the *concours* for admission to the *agrégation*, and does not allow them to be named without a *concours* for the posts of chief of clinic, substitute professor, etc., in the faculties and schools of medicine. The association of members of the teaching corps unanimously pronounced in favor of maintaining the *agrégation*, and of permanent tenure of the post of *agrégé* (at present the *agrégés* are appointed only for a period of nine years).

The Struggle Against Infant Blindness

The minister of the interior has issued to the prefects an important circular relative to the measures to be taken for the prevention of infantile blindness. Notwithstanding that the number of cases of ophthalmia neonatorum has sensibly diminished during ten years, much yet remains to be done in this field. The circular refers to the decree authorizing pharmacists to furnish midwives with a 2 per cent. solution of silver nitrate for preventive instillation in the eyes of the newborn. It recommends the utmost publicity for the following notice: "If the child's eyelids are red, swollen, or glued together, if there is any trickling of liquid or, of pus, you may be sure that it does not come from a draught, but from a serious disease. You should suspect ophthalmia, which may make the child blind, and should cause it to be immediately examined and attended by a physician that very day." Finally, the circular calls on the prefects to organize in their departments a medical service for the prevention in school children of the disorders resulting from neglected myopia. It also insists on the necessity for suitably equipping both in personnel and material the local ophthalmologic clinics.

A permanent investigating committee for the aid of the blind, instituted by M. Mirman, director of assistance and public hygiene, has been at work for three months at the ministry of interior, and M. Clemenceau informed himself as to the views of this committee before issuing the above mentioned circular to the prefects.

The recent inaugural thesis of Dr. Jules Vergne on eye inspection in schools, brings strongly into view the gravity of the disease and the necessity for combating it with energetic measures. The following figures are taken from the statistics given by Dr. Vergne: in a *lycée* of the department of the Cher, out of 275 pupils examined only 130 were found normal; in a communal school in Paris, 85 children out of 202 showed a perceptible diminution of visual acuity.

Myopia is generally held to be of school origin. If it were really such, the districts where the illiterates are most numer-

ous should furnish the least myopics. Dr. Vergne, however, found entirely the opposite conditions prevailing, when arranging by departments according to the rules of revision the list of young men exempted from military service for myopia. But if the school is not the primary cause of myopia, it is none the less true that the average of myopia increases from class to class. The sight of the children, then, should be the object of constant care, and it is to be wished that eye inspection should form part of the medical inspection of schools, as it has done for some time in England. Thanks to the happy initiative of certain specialists, like Dr. Baudry of Lille, Professor Truc of Montpellier, Professor Motais of Angers, this inspection is already in operation in a certain number of towns.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, April 28, 1909.

The Twenty-sixth Congress for Internal Medicine

The Congress for Internal Medicine met in Wiesbaden from April 19 to 22 under the presidency of the well-known clinician of Bonn, Professor Schultze. Nearly a hundred papers were announced and in spite of the fact that the special sessions were considerably prolonged, several members did not succeed in addressing the congress, on account of lack of time. Among the papers read the majority dealt with the circulatory system and metabolism. There is much activity in both of these fields at the present time in the German clinics, especially in those of Berlin, Munich, Heidelberg and Tübingen.

On the first day the only address was that of Prof. Magnus-Levy of Berlin, a young but meritorious investigator in the field of diseases of metabolism. He spoke on the subject of "The Metabolism of Mineral Substances in Human Pathology." Among the mineral substances calcium is of great importance for man, as its quantity varies in different diseases. In rickets there is present too little calcium; this does not depend, as was formerly believed, on the lack of calcium in the diet but on a disturbance of the function of the bone cells. Phosphorus, sulphur and iodin have a somewhat obscure relation to the human organism. On the other hand, of late years it has been shown that common salt has a very important influence, 15 to 20 gm. of sodium chlorid, which is usually the amount taken daily by healthy people, are excreted from the system within twenty-four hours. On the other hand, it has been shown by Widal of Paris and H. Strauss of Berlin that when the excretion of salt in patients with diseases of the kidneys diminishes dropsy occurs. On this fact Widal founded the treatment of nephritic dropsy by restriction of salt in the diet and clinical experience has shown that good results are obtained by this method in many cases. In other diseases also salt is influential in the treatment as for instance, in diseases of the circulatory system, and it has been shown that in the treatment of epilepsy by bromids after salt is excluded the action of the bromids is increased. Finally in nutritive disturbances of nurslings, it has been shown by the investigations of the Berlin pediatrician Finkelstein that fever with loss of albumin and fat may be produced by sodium chlorid and disappear on the withdrawal of that substance; eczema may arise from the same cause. On the conclusion of Magnus-Levy's address, Widal of Paris explained his method of "dechlorouration" in disease of the kidney. How large an amount of salt is harmless to the patient must be determined in every case as from ½ to 2 gm. a day are sufficient in many cases to make the food palatable. It is not necessary to give the dropsical nephritic patient an absolute milk diet, but a mixed diet may be given if the amount of salt is reduced to a proper degree. A number of other speakers, especially H. Strauss of Berlin, Bickel of Berlin and Gerhardt of Basel, discussed the subject of metabolism of mineral substances, but there is nothing special to note regarding their addresses.

Great interest attaches to the address of Professor Lenhartz of Hamburg on the third day regarding the treatment of gastric ulcer. For several years Lenhartz has departed from the Leube method and gives on the first day of treatment, even immediately after the cessation of hemorrhage, eggs and milk by the mouth. The hyperacidity which accompanies the ulcer is diminished by the albumin of the egg which combines with the hydrochloric acid and medicines for neutralizing the hydrochloric acid are unnecessary. The pain is also relieved by this diet, so that bismuth and morphin are not needed. As the patients are sufficiently nourished from the first day they are not so much reduced as by the ordinary method and there is less danger of death from asthenia which is likely to happen after severe bleeding. The patient can leave the bed much sooner than usual. In order to compensate for the hemoglobin lost by hemorrhage Lenhartz gives his patient iron pills (Blaud's pills?) which are well borne according to his experience. In the discussion Leube spoke first. Notwithstanding the fact that the results of his many years' experience demonstrated the satisfactory character of his method of treatment, he concludes that one is justified from the communication of Lenhartz in putting patients on a solid diet sooner than heretofore; but for the first days of treatment the nutrient enemata are to be continued especially after hemorrhage. Most of the other speakers, v. Müller of Munich, Moritz of Strassburg, Gerhardt of Basel, Fleiner of Heidelberg, Krehl of Heidelberg, etc., took an intermediate view, but confirm from their own experience the claims of Lenhartz. Fleiner, however, adheres to the old plan of the Leube treatment in its entirety.

On the third day of the session the well-known London neurologist, Head, opened with an address on the subject, "Sensibility and the Testing of Sensibility." Head studied the disturbance of sensibility arising after section of the sensory nerves of his own left forearm, according to the methods developed by him and especially made a comparison of the disturbance during and after the regeneration of the nerves with those disturbances already determined. The details of this investigation must be omitted for lack of space.

From the great number of other papers I give only a brief notice of a few. The clinical significance of the electrocardiogram was much discussed and its value for the diagnosis of disturbance of the heart function was thoroughly recognized. Professor Hoffmann of Düsseldorf was of the opinion that the curves did not indicate the functional capacity of the heart but only the irritability of the heart muscle. Examination of the heart, lungs and digestive organs by the *x*-ray was demonstrated. Professor Goldscheider of Berlin described his method of graduated percussion of the lungs, with which he claims to have obtained better results than with the ordinary loud percussion. Professor Pässler of Dresden has carefully observed the condition of the mouth in certain affections which run their course with the picture of general intoxication and found that purulent affection of the pharyngeal tonsil or the teeth was the cause. By appropriate treatment of these organs the general symptoms were relieved.

Plesch, of Budapest, an assistant of Professor Kraus of Berlin, has devised a method by which it has been determined from the respired air that 4.5 liters of blood circulate in the body every minute and that 60 c.c. of blood are expelled from the cavities of the heart at each contraction. The blood moves with a velocity of 50 cm. in a second. A complete course of the blood through the body occurs in 55 seconds with 65 pulse beats. The heart performs in a minute the work of 14 meterkilograms; it is eight times better supplied with blood than the rest of the body. In anemic people the amount of blood circulating to a minute is raised to 20 liters. The heart of a healthy man in 60 years performs 350,000,000 meterkilograms of labor and expels from its cavities 2,800,000,000 liters of blood into the circulation.

Curschmann of Mainz draws attention to the fact that in threatened uremia in consequence of kidney disease the tendon and skin reflexes are markedly increased, a fact that may be of diagnostic importance. O. Müller, of Tübingen, from his investigation on the digitalis bodies, draws the conclusion that these preparations act only on the heart and not on the peripheral blood vessels. v. Tabora, of Strassburg, recommends in case of an overloading of the venous system, either a full venesection or to encircle the limbs with an elastic band, so that the blood may be temporarily excluded from the circulation. Schottelius reports favorable results from the treatment of dysentery with an antitoxic serum.

The next congress will be held in 1910, again in Wiesbaden. The president is Professor Kraus, of Berlin.

Work of the Berlin Medical Inspectors of Schools

Each school physician is required to visit quarterly each school placed under his charge. In the report of the president of the association of Berlin school physicians, which recently appeared, a protest is made against the use of a common drinking glass as, especially during the prevalence of an epidemic, there would be danger of conveyance of disease. The school carbonic acid baths are very much liked. Instruction in swimming is given to pupils without charge. The misuse of alcohol has markedly diminished among the school children and now affects only a very small portion of the pupils. To obviate the disadvantage in sitting still during the classes a free movement is permitted in the ten-minute recesses.

Pharmacology

POSLAM

W. A. Puckner and W. S. Hilpert

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION.]

A number of inquiries having been received regarding the composition of "Poslam," the preparation was examined in the Association's laboratory. It is evident, from the letters received, that this nostrum is widely advertised. As physicians are likely to be questioned by their patients as to the therapeutic value, or lack of value of "Poslam," it is desirable that they should be in a position to express an intelligent opinion on the subject.

EXAMINATION OF THE PRODUCT

The preparation is found on the market in small three-quarter ounce "trial" tins, and in 5½ ounce jars bearing the name "Poslam," and the name of the manufacturers, "The Emergency Laboratories, 32 West Twenty-fifth street, New York City," with descriptive matter, in which it is stated that "*the success of Poslam in the cure of eczema and all kindred skin diseases has been absolute.* . . ."

Poslam as examined in the Association laboratory was found to be a gray ointment of the consistency of petrolatum and possessing an odor of oil of tar. Qualitative examination demonstrated the presence of zinc oxid, sulphur, starch, tar oil, menthol, salicylic acid and a fatty base, probably petrolatum. From the results of quantitative estimations[1] it was concluded that the composition of Poslam was essentially as follows:

Zinc oxid	12.01	parts
Sulphur	6.67	parts
Corn starch	22.00	parts
Tar oil	15.18	parts
Menthol, Salicylic acid	Small quantity of each	
Fatty base q. s.	100	parts

From the results of the analysis it can be seen that the preparation depends for its action on such simple remedies as zinc oxid, sulphur and oil of tar. These have long been used and known as more or less effectual remedies for the treatment of skin affections, but certainly do not warrant such claims as are made in the advertising matter sent out with poslam stating it to be "The newest medical discovery for the treatment of eczema and all other skin affections" and ". . . entirely different from anything yet used . . ."

1. Details of the quantitative analysis of Poslam will appear in the Annual Report of the Chemical Laboratory of the American Medical Association, or they may be had on request.

ANTINEURASTHIN

A New Use for Eggs and Milk

A German nostrum known as "antineurasthin" has been given—for a substantial consideration—many columns of space in British newspapers. This "cure for nervousness" is an "epoch-making discovery" of one Dr. Hartmann. According to the *Pharmazeutische Zeitung* the firm of "Dr. Hartmann" is one of a group of quack-medicine manufacturers against whom the chief of the Berlin police issued a public warning: The commercial possibilities of antineurasthin having thus received a substantial setback in the paternalistic Fatherland, the business, it appears, was transferred to Germany's more *laissez-faire* western neighbor across the North Sea, and we understand is about to appear in this country also.

THE ANALYTICAL "REPORT"

In any event antineurasthin has been heavily advertised as the cure for the "Twentieth Century Disease," and as a remedy that "directly combats the brain-cell and nerve-ganglionic cell degeneracy," whether this sad state of affairs is "due to overwork or mere malnutrition"! Testimonials of the most approved type and an elaborate "report" from an "analyst" with a long string of high sounding titles form part of the stock-in-trade. The editor of London *Truth*, having had occasion to pay his respects to this nostrum, was particularly struck by the positiveness of the statements that appeared in the published "report" of this particular "analyst" regarding the virtues of antineurasthin; they read "a good deal more like the work of an advertisement-writer than that of a man of science." For instance, the "analyst" states in his report:

> "Antineurasthin" does not only "relieve;" it cures by "feeding" the attenuated nerve cells, and thus after awhile, restored to their normal energy and vital powers, they are able to perform their brain and tissue-renewing functions again without external aid.

It is rather unusual for a chemist to express an opinion like the foregoing, on the medical properties of a preparation, based merely on a laboratory analysis. *Truth* sent a representative to the "laboratory" and found that it consisted of some rooms "somewhere upstairs" in the private house at which the "analyst" lodged. The "analyst" himself was not at home and all the landlady could tell about the "Chemical and Physical Laboratories" was that her lodger had "a quantity of bottles" and other paraphernalia in his apartment, "with which he occasionally made appalling smells."

WHAT IS ANTINEURASTHIN?

As to what this "cure for nervousness" is, there seems to be a difference of opinion. According to the manufacturer:

> Antineurasthin itself is a scientifically compressed compound of the Myelinic (or Lecithinic) elements of certain costly foods, especially rich in this valuable brain-building constituent of the best of our daily foods.

But the *British Medical Journal*, which had the stuff analyzed suggests that the composition of this marvelous renewer of brain energy is approximately as follows:

Dried yolk of egg	3.8 per cent.
Dried white of egg	5.4 per cent.
Dried separated milk	57.8 per cent.
Gum	2.4 per cent.
Potato starch	22.7 per cent.
Moisture	8.3 per cent.
Aromatic substances	Traces

The daily dose of four tablets or 122 grains would, according to this formula, contain the equivalent of 10 grains of yolk and 43 grains of white of egg (not dried); the ratio between these is about the same as exists in an average egg and the two may be put together and regarded as about a teaspoonful of fresh egg; in addition the daily dose would represent about 2 oz., or a quarter of a tumblerful, of separated milk and a little starch.

In extolling the "lecithinic elements of certain costly foods" of which its product is said to consist, one wonders whether the Antineurasthin Company is guilty of a subtle joke in thus referring to the outrageously high price of hen's eggs during the past winter! As to the ethics of selling eggs and milk under a fancy name and for a still more fancy price, as a cure of nervousness, we can not do better than quote from the article in *Truth*, already referred to, and which bears the caption, "Hens' Eggs and Nerve Trouble."

> "What the public should understand, however, is that most preparations of this kind are based on some remedy, the efficacy of which in certain cases is well-known. In this particular instance the remedy seems to be yolk of egg. The great discovery of Dr. Hartmann converts the domestic hen into a rival of the goose that laid the eggs of gold. The *modus operandi* is worth the attention of poultry farmers. You dry your hens' eggs; you mix them up with plenty of starch, separated milk, or other harmless ingredients; you get a few imposing testimonials and reports from parties who deal in such articles; you engage a smart advertisement-writer, prime him with a little fact and a great deal of scientific jargon; you rent as many pages or columns in the press as you can afford; and your hens' eggs hatch out into handsome dividends. The Twentieth Century Disease, however, goes on as before. My own impression is that quite the worst disease of the twentieth century is the disposition to swallow excessive quantities of preparations of this character, and equally excessive quantities of the newspaper advertisements relating to them."

Eye Examination in Children.—K. H. Goldstone advises examination of the eye fundus in any child who after the fifth month fails to hold up its head, who does not grasp objects, and in whom hyperacusis is present. He believes that amaurotic family idiocy is not so rare as was formerly thought.—*Jour. Med. Soc. of New Jersey*, February.

Miscellany

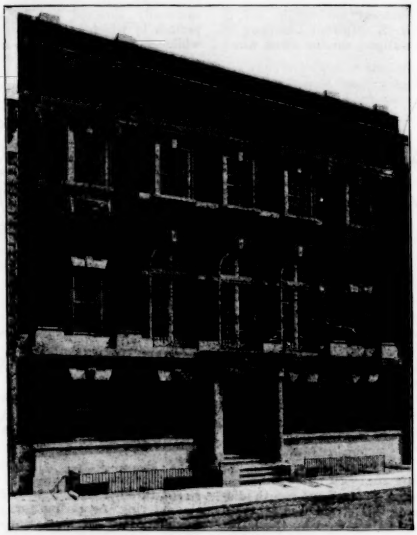
The New Building of the Medical and Chirurgical Faculty of Maryland

The new building of the Medical and Chirurgical Faculty of Maryland, noted editorially in THE JOURNAL, May 15, p. 1580, is the first to be erected by a state medical society in the United States and will be a suitable meeting-place for the society as well as a safe depository for the new library. The dedication will be reported in connection with the state society meeting.

For many years the Medical and Chirurgical Faculty of Maryland has been housed in an ordinary three-story dwelling-house where the meeting halls were too small and the book shelves overcrowded. The contributions for the building have been made by members of the society and public-spirited citizens both toward the general building fund and also to a separate fund contributed as a testimonial to Dr. Osler. In addition, the General Assembly of Maryland, in 1908, voted a donation of $12,500.

The building is the result of much study, both of the needs of such a building, and of other libraries. The chief feature that the committee had in view was to combine a medical building for a meeting-place for the members of the society and for instructive lectures to the public, and an endeavor was made to have the meeting rooms confined to the first floor. The second feature was to have a quiet place for reading where there would be little or no noise or confusion. The book stack is unique in that very little light from the outside has been permitted, there being only a few small windows, so that the books are protected from the action of light.

The property on which the library stands has a frontage of sixty-six feet on the east side of Cathedral street between Preston and Biddle streets, and runs through to Maryland avenue with a depth of two hundred and forty-six feet.



The new building of the Medical and Chirurgical Faculty of Maryland.

The building itself is a fire-proof construction of reinforced concrete and brick, having a facade of about 50 feet in height, with a pilaster treatment above, and a basement story on the street level. The treatment is of the Georgian or English colonial type of architecture executed in granite, limestone, terra cotta and brick; the brick work is laid in Flemish and English bond. The entrance to the building is through a vestibule with a marble base and architraves, to the main corridor leading to the stairs and principal rooms. On the right on entering there are two rooms that will be used by the registry for nurses under the direction of the Maryland Association for Nurses. On the left is a room dedicated to the late Dr. Aaron Friedenwald, handsomely furnished in oak and brown leather, and to be used as a conversation room. Back of this is a small meeting hall, with a seating capacity of about 150. Again on the right are the committee, cloak and toilet rooms, and a handsome stairway of solid masonry with marble steps and mahogany handrail, with a wrought iron balustrade, and well-lighted by a skylight and windows.

At the end of the corridor, opposite the front door, is the main auditorium, having a seating capacity of 500, well-lighted by windows at the back and by a large skylight in the vaulted ceiling. The two halls are so arranged that the two may be used together to accommodate unusually large audiences.

The basement of the building contains ample space for the storage of books, manuscripts and reports, and also has a shipping and receiving department; and contains the heating apparatus. Connected with the basement corridor through wide glazed doorways is a supper room of ample size, equipped with kitchen and pantries.

On the second floor of the building extending across the whole front is the main reading-room, known as the "Frick Room," having a high ceiling with beams and an elaborate cornice and wainscot of green material trimmed with mahogany, with a handsome fire-place and mantel at one end of the room and a gracefully arched alcove at the other. This room is furnished in mahogany, with easy chairs, writing tables and other conveniences for the use of the readers. Opening from this room is the periodical room, and back of this the librarian's office, and between this and the book stack is the cataloging room.

The back of the main building, which does not include the principal auditorium mentioned above, is given up to the stack room, which is designed after the most modern models, is fitted with the best Snead metal fireproof stacks and has a capacity of 70,000 volumes; it can be entered only through a fireproof door from the cataloging room and is practically a solid vault of concrete, brick and steel.

On the third floor are five large rooms, one of which will be used for a clinical laboratory for the use of the members, the others for section meetings and committees.

The fourth floor is not visible from the front and contains housekeeping apartments for the librarian and assistant, complete in every detail of convenience and equipment.

Origin of the Outbreak of Foot-and-Mouth Disease

The Bureau of Animal Industry of the U. S. Department of Agriculture has just published the result of the investigation of the origin of foot-and-mouth disease among cattle which prevailed during the early part of last winter. An abstract of the report furnished by the bureau is as follows:

The recent outbreak of foot-and-mouth disease in Michigan, New York, Pennsylvania and Maryland started from calves used in the propagation of smallpox vaccine virus which had been contaminated with the virus of foot-and-mouth disease, and the contaminated strain of vaccine originally came from a foreign country. These are the conclusions from an investigation made jointly by the Bureau of Animal Industry of the Department of Agriculture and the Public Health and Marine-Hospital Service of the Treasury Department, a report of which has just been issued. The investigation was conducted by Dr. John R. Mohler, chief of the Pathological Division of the former bureau, and Dr. M. J. Rosenau, director of the Hygienic Laboratory of the latter bureau.

Foot-and-mouth disease was discovered among cattle in Pennsylvania Nov. 10, 1908, and was reported to the Department of Agriculture by the state veterinarian of Pennsylvania. A few days later it was found also in Michigan, New York, and Maryland. In view of the strict quarantine maintained by the Department of Agriculture on imported live stock and the fact that the importation of ruminants from countries where this disease existed was prohibited entirely, the department considered it highly improbable that the infection was brought in with animals. When, therefore, the disease was traced by inspectors of the Bureau of Animal Industry to calves that had been used for vaccine by a Detroit establishment (Parke, Davis & Co.), and the cases of longest standing were found among these calves, these facts caused Secretary of Agriculture James Wilson and Dr. A. D. Melvin, Chief of the Bureau of Animal Industry, both of whom had gone to Detroit to make a personal investigation of the outbreak, to suspect that the vaccine was contaminated with the virus of foot-and-mouth disease. As the United States Public Health and Marine-Hospital Service was charged by law with the supervision of biologic products used in human medicine, that service was requested to join the Bureau of Animal Industry in making an investigation.

The main facts regarding the outbreak as brought out in the report are as follows: The H. K. Mulford Company of Glenolden, Pa., imported certain smallpox vaccine virus which was contaminated with the infection of foot-and-mouth disease. In May, 1908, some vaccine of this strain was procured by Parke, Davis & Co., of Detroit. Calves used by the latter firm in propagating vaccine were sent October 16 to the Detroit stock-yards and thence on the same day to a farm near Detroit. On October 20 three carloads of cattle from points in Michigan reached the Detroit stock-yards and were put into the pens that had been occupied by the vaccine calves four days previously. Some were sold for slaughter at Detroit, while the remainder were shipped to Buffalo, and some were reshipped to Danville and Watsontown, Pa., where the disease was first observed some days later. The disease spread to various places in Pennsylvania and New York and to one locality in Maryland.

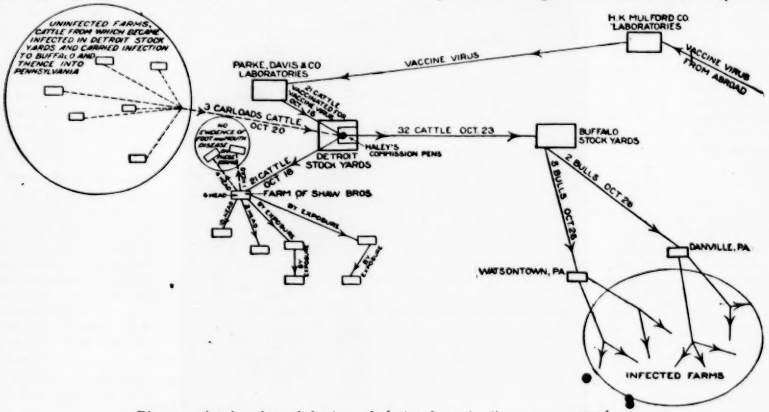

UNINFECTED FARMS
CATTLE FROM WHICH BECAME INFECTED IN DETROIT STOCK YARDS AND CARRIED INFECTION TO BUFFALO AND THENCE INTO PENNSYLVANIA
H.K. MULFORD CO. LABORATORIES
VACCINE VIRUS
VACCINE VIRUS FROM ABROAD
PARKE, DAVIS & CO LABORATORIES
CATTLE INOCULATION OCT. 8 & 9
3 CARLOADS CATTLE OCT. 20
NO EVIDENCE OF FOOT AND MOUTH DISEASE
32 CATTLE OCT. 23
BUFFALO STOCK YARDS
DETROIT STOCK YARDS
HALEY'S COMMISSION PENS
8 CATTLE OCT. 16
FARM OF SHAW BROS.
2 BULLS OCT. 29
5 BULLS OCT. 29
DANVILLE, PA.
WATSONTOWN, PA.
INFECTED FARMS

Diagram showing how infection of foot-and-mouth disease was spread.

The investigation also indicates that the outbreaks of foot-and-mouth disease in New England in 1902-3 were probably due to contaminated vaccine of Japanese origin from the Mulford Company. While an investigation was made at that time, the results were confusing so that it was not definitely determined that the outbreaks were due to contaminated vaccine virus. In the recent investigation by Drs. Mohler and Rosenau, however, they used animals which had been vaccinated and were therefore immune to vaccinia or cowpox, so that in case the infection of foot-and-mouth disease was present in the vaccine under suspicion the lesions of that disease would not be suppressed or obscured by those of vaccinia. By this method and by means of intravenous inoculation they were able to detect the contaminating infection when it might not otherwise have been discovered.

The fact that the infection was present in the vaccine virus of the Mulford Company for so long a period, but was not transmitted to outside cattle, was doubtless due to this firm's practice of killing its calves after taking the vaccine virus. Parke, Davis & Co., on the other hand, rented their calves and placed them again on the market a short time after the vaccine material was taken. In this way the disease spread from the vaccine stables of Parke, Davis & Co., but not from those of the Mulford Company, although it was the vaccine virus from the latter establishment that infested the former's cattle.

According to Drs. Mohler and Rosenau, foot-and-mouth disease is primarily and principally a disease of cattle, and affects man only secondarily and casually. Children are occasionally infected by drinking unboiled milk during the periods in which the disease is prevalent in the neighborhood, while persons in charge of diseased animals may become infected through contact with the diseased parts or by milking, slaughtering, or caring for the animals. The disease when communicated to man, however, is very seldom fatal, the affection usually being too slight to come to the notice of the family physician.

As soon as the facts regarding the contamination of vaccine became known the licenses of the two firms involved were at once suspended, all the suspected vaccine virus on hand was destroyed and that on the market withdrawn, and other measures of a radical nature were taken. The report commends the intelligent and prompt cooperation of the Mulford Company and Parke, Davis & Company in accomplishing this end.

After examination of every strain of vaccine on the market it is stated that there is now on the market no vaccine contaminated with the virus of foot-and-mouth disease. Regulations have been formulated with a view to preventing hereafter the propagation of contaminated vaccine virus. No instance of the transmission of foot-and-mouth disease to man through vaccine virus has been recorded, and it is considered doubtful, in view of the tests made, if it is possible to reproduce the disease in him by the cutaneous inoculation commonly used in the process of vaccination.

The recent outbreak of foot-and-mouth disease in live stock has been eradicated after vigorous work by the Bureau of Animal Industry in cooperation with state authorities, involving the expenditure of $300,000 by the Federal Government alone. The quarantine on the last of the infected territory was removed April 24.

Book Notices

THE SURGERY OF THE EAR. By Samuel J. Kopetzky, M.D., Attending Otologist, New York City Children's Hospitals and Schools. Cloth. Pp. 368, with illustrations. Price, $4.00. New York: Rebman Co.

This book mentions everything of importance relative to aural surgery and evidently is the result of painstaking and conscientious effort. Anatomic considerations accompany the description of each operation and the latest modifications and suggestions are included, so that the work may be regarded as up-to-date and based on a careful study of the literature of the subject.

As is proper, the greatest stress is laid on mastoid and its accompanying brain and neck surgery, but the minor operative procedures, such as paracentesis, ossiculectomy, and the little operations on the external auditory canal are also considered; and subjects accessory to the surgery of the ear, such as paralysis of the facial nerve and the diagnostic procedure of lumbar puncture, receive satisfactory mention. It is evident from the text that Dr. Kopetzky has had an extensive personal experience in the operative measures he describes.

While the book has the merits mentioned it demands a careful revision in future editions in order to remove the faults which it now possesses. Description is frequently vague and Dr. Kopetzky's familiarity with his subject has often led him to use mere allusion in place of the careful and detailed explanation required to instruct those less versed in the study of the ear. Many of the operations are so vaguely described and with such a lack of adroitness in expression that it would be necessary to consult other books before one could feel prepared to perform them; and the anatomic part of the book suffers from the same lack of skill in the use of language. In fact, the English of the entire work needs careful revision and there is hardly a page where some bit of description or an expression is not lacking which, if supplied, would help to explain a subject now left obscure. As an example, in the paragraph on new growths of the auditory canal no mention whatever is made of the nature of these growths, so that the reader can not tell whether the author is referring to a carcinoma, a papilloma or a fibroma. Anatomic structures familiar to the author are frequently referred to by him by but a part of their names, thus confusing the reader. Thus the squamous portion of the temporal bone is spoken of simply as the squamosa. There is also much inaccuracy in Latin diction, such as the use of "cavitas *concha*" for "cavitas *conchæ*," "*porous* acusticus" for "*porus*." Similar little slips in English and Latin are frequent throughout the work and show a carelessness in revision which is unfortunately frequent in American medical literature. To sum up, the book is one which catalogues fully its topics and contains much useful information conscientiously collected; but this information is presented in a manner which is often so confused and inaccurate in expression that it conveys no clear idea to the reader and could not serve as a guide for the operative procedure of which the description is attempted. The work is far from belonging to the list of classical text-books which have a standard place in medical literature because they represent the product of superior authoritative knowledge combined with the rare qualities of exact, lucid and logical description.

ANATOMIE UND MECHANISMUS DER SKOLIOSE. Von Carl Nicoladoni, Professor der Chirurgie an der Universität Graz, K. K. Hofrat. Cloth. Pp. 58, with illustrations. Price, $2.25. Wien: Urban & Schwarzenberg, 1909.

This book of 58 pages contains a minutely detailed description of the macroscopic anatomic peculiarities occurring in high-grade lateral curvature of the spine, most of the material having been drawn from a very complete dissection of the cadaver of an adult female scoliotic. The changes in shape and position of the abdominal and thoracic viscera are noted and described, as well as the skeletal abnormalities. The work will be of great interest to the orthopedic specialist, but is too highly technical for those not especially familiar with the subject. A series of 37 plates, beautifully executed, accompanies the text. The German literature on the subject is briefly reviewed, and there is a short introduction by Julius Hochenegg.

UEBER FREMDE KÖRPER, WÜRMER UND INSEKTEN IM MENSCHLICHEN OHR UND IHRE BEHANDLUNG VON DEN AELTESTEN ZEITEN BIS HEUTE. Von Dimitrios Styl. Dimitriadis, Privat-docent an der Athener Universität. Pp. 248. Athens: Druck von P. D. Sakellarios, 1909.

The quaint work of Dr. Dimitriadis on foreign bodies, worms and insects in the human ear is essentially a historical one. By reference to the original source he sketches the views regarding foreign bodies, animate and inaminate, in the ear from the days of classic Greece to modern times. It is interesting to note that even the earlier observers recognized the importance of foreign bodies in the ear and gave sound advice regarding their removal. Almost all surgeons agree in recommending the syringe before using traction instruments. From more recent literature he quotes some of the oddities occasionally observed and shows by illustrative cases the possible danger to life from foreign bodies in the ear, especially from unskillful efforts at removal. Six plates illustrate surgical instruments of the ancients.

DISEASES OF THE DIGESTIVE CANAL. By Paul Cohnheim, Specialist in Diseases of the Stomach and Intestines in Berlin. From the Second German Edition. Edited and Translated by Dudley Fulton, M.D., Lecturer on Medicine, University of Southern California, Los Angeles. Cloth. Pp. 373, with illustrations. Price, $4. Philadelphia: J. B. Lippincott Co.

The practicality of this work should commend it to the general practitioner, for whom it is especially intended. Marked emphasis is placed on obtaining a thorough clinical history, and laboratory methods are simplified and assigned their proper place as aids in the diagnosis. The principles of dietetic treatment, massage, etc., are given in an appendix. The translation is well done; but the term Rhodankalium is transferred directly from the German, and we fear it might be unintelligible to the average reader.

SPECIAL HOSPITALS—THEIR ORIGIN, DEVELOPMENT AND RELATIONSHIP TO MEDICAL EDUCATION, THEIR ECONOMIC ASPECTS AND RELATIVE FREEDOM FROM ABUSE. By Richard Kershaw. Paper. Pp. 72. London: Geo. Pulman & Sons, Ltd.

This brochure is a defense of specialism in medicine and an apologia for special hospitals in general and the Central London Throat and Ear Hospital, of which Kershaw is secretary, in particular. It begins with an interesting review of specialism in medicine from the earliest date, with illustrations of Greek and Roman votive tablets, oculists' seals, etc. It then discusses chronologically the establishment of the special hospitals of modern times in Great Britain and Ireland from the foundation of the London Fever Hospital, 1801, to the nine special hospitals founded in the last decade of the nineteenth century, bringing the total up to 167. Hospital economy is considered and the abuse of hospital charity discussed. The value of special hospitals in medical education is demonstrated by the fact that nearly all the heads of special departments in the great teaching hospitals of medical schools gained their training in the special hospitals. We are sorry that Kershaw helps to spread the prevalent idea that no dissection was permitted in the teaching of anatomy and surgery until the middle of the sixteenth century.

FRÜHDIAGNOSE UND TUBERKULOSE-IMMUNITÄT, unter Berücksichtigung der Neuesten Forschungen: Konjunktival und Kutan-Reaktion, Opsonine, etc., Speziell der Therapie und Prognose der Tuberkulose. Von A. Wolff-Eisner, Berlin, Arzt f. innere Krankheiten u. Bakteriologie des städt. allgemeinen Krankenhauses Friedrichshain-Berlin. Edition 2. Paper. Pp. 378, with illustrations. Price, 12 marks. Würzburg: Curt Kabitzsch (A. Stuber's Verlag), 1909.

As the title indicates, this book discusses the latest developments in the study of the reactions of the human body to tuberculous infection with especial reference to their practical application in diagnosis, treatment and prognosis. The characteristics, the significance, and the technic of the production of the cutaneous and conjunctival reactions are fully described and well illustrated. While the book in some ways bears evidence of considerable haste in preparation, yet it is recommended as an exhaustive and authoritative work in the field that it covers. The illustrations and curves are instructive and valuable. There is a good table of contents, a list of 577 references to the literature, but no index at the end of the volume.

SURGICAL DISEASES OF CHILDREN. By Samuel W. Kelley, Professor of Diseases of Children, Cleveland College of Physicians and Surgeons. Cloth. Pp. 768, with illustrations. Price, $5.00. New York. E. B. Treat & Co., 1909.

A book devoted to surgical pediatrics is something new. Ordinarily the subjects are covered in works on orthopedic surgery and general surgery. Dr. Kelley's implied reason for the creation of this new general subject is that of all surgical disorders of children, some are found only in children, some are found most often in children, and the rest are modified by occurrence in children. Thus surgical pediatrics, as a subject separate from general surgery, is justified in the same way as medical pediatrics as separate from general medicine, but differently from the justification of orthopedic surgery which is identified by dealing only with certain structures, and not only with a certain age.

The book systematically covers examination of children, surgical pathology of childhood, general infections, fractures and other traumas; all congenital and acquired deformities, bone and joint diseases, and regional surgery in children. The book is well illustrated, the twenty-six page index, an important part of any large book, is carefully prepared, and Dr. Kelley's tone is judicious, personal and not unduly authoritative, for no one man can be authority for such a long range of subjects.

A MANUAL OF CLINICAL DIAGNOSIS. By James Campbell Todd, Ph.B., M.D., Associate Professor of Pathology, Denver and Gross College of Medicine (University of Denver). Flexible Leather. Pp. 318, with illustrations. Price, $2.00. Philadelphia: W. B. Saunders Co., 1908.

This manual is well adapted to be a guide to the clinical laboratory work of the general practitioner. The methods are practical and are selected on the principle that it is better to learn one method well than to be acquainted superficially with many. The book is convenient in size and well illustrated, which adds greatly to the value of such a work.

A TEXT-BOOK OF MEDICAL CHEMISTRY AND TOXICOLOGY. By James W. Holland, A.M., M.D., Professor of Medical Chemistry and Toxicology, and Dean, Jefferson Medical College, Philadelphia. Second Edition. Cloth. Pp. 655, with illustrations. Price, $3. Philadelphia: W. B. Saunders Co., 1908.

The second edition of Dr. Holland's text-book presents a thorough revision, which brings it in accord with the recent edition of the United States Pharmacopeia and the advances in physiologic chemistry. Few medical students enter on their course with a thorough understanding of general chemistry; and this fact makes it necessary to devote a large part of the work—more than half—to general chemical principles and the chemistry of the elements. The treatment, however, is specially suited to the requirements of the medical student. The sections dealing with organic and physiologic chemistry include the methods of analysis of the gastric contents, milk and urine. The tests given are such as will be practically useful. While the revision has introduced the most recent methods, it is a little disappointing to find antiquated methods like Ewald's salol test and the use of potassium iodid to determine the absorptive power of the stomach still retaining a place in so excellent a text-book.

A SYSTEM OF MEDICINE. Vol. 4. Parts 1 and 2. By Many Writers. Edited by Sir Clifford Allbutt, K.C.B., M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge, and Humphry Davy Rolleston, M.A., M.D., F.R.C.P., Senior Physician, St. George's Hospital, Cambridge. Cloth. Price, $3 per volume. New York: The Macmillan Co., 1908.

This volume iv has been divided into two parts: The sections on diseases of the nose, pharynx and larynx have been expanded and combined with a section on diseases of the ear to form a separate volume. Some new articles have been introduced and the subjects treated in the previous edition brought up to date. No extensive review or commendation of this valuable and well-known work is necessary. The inclusion of diseases of the ear in a work on general medicine, while unusual, seems eminently appropriate, both on account of the intimate relations of the ear with the brain, and also because the general practitioner will naturally desire to find in his treatise on medicine such an account of ear diseases as will enable him to treat successfully such patients as need not be referred to a specialist.

Association News

CLINICS AT PHILADELPHIA

Series of Clinics and Demonstrations Arranged for Those Who Go to Atlantic City

THE JOURNAL has received the following announcements:

MEDICO-CHIRURGICAL COLLEGE

The Medico-Chirurgical College of Philadelphia cordially invites any members of the American Medical Association to visit the institution on their way to or from Atlantic City, and to attend the special clinics as indicated below:

Monday, June 7

9 a. m. Internal Medicine, Prof. James M. Anders.
10 a. m. Surgery, Prof. William L. Rodman.
11 a. m. Surgery, Prof. William L. Rodman.
12 m. Orthopedics, Prof. James P. Mann.
1 p. m. Ophthalmology, Prof. L. Webster Fox.
3 p. m. Internal Medicine, Prof. Judson Daland.

Saturday, June 12

10 a. m. Obstetrics, Prof. W. Frank Haehnlen.
11 a. m. Surgery, Prof. Ernest Laplace.
12 m. Genitourinary Diseases, Prof. H. M. Christian.
1 p. m. Pediatrics, Prof. W. C. Hollopeter.
3 p. m. Otology, Prof. Edward B. Gleason.

Other clinics will be arranged for Monday, June 14, if desired by any of the visitors.

The members of the Association are also cordially invited to attend the Alumni Reunion and Smoker of the Medico-Chirurgical College on the evening of Tuesday, June 8, which will be held at the Hotel Rudolf, on the Boardwalk, at Atlantic City.

SAMARITAN HOSPITAL

The staff of the Samaritan Hospital, Broad and Ontario streets, Philadelphia, will give clinics for visiting physicians as follows:

Monday, June 7

11-12 a. m. Medical Clinic, Dr. I. Newton Snively.
12-1 p. m. Gynecologic Clinic, Dr. Frank C. Hamond.
1-2 p. m. Exhibition of Gynecologic Specimens, Dr. Harry A. Duncan.
2-3 p. m. Rectal Clinic, Dr. Collier F. Martin.
3-4 p. m. Ear, Nose and Throat Clinic, Dr. Nathan G. Ward.
4-6 p. m. Surgical Clinic with Demonstrations of Spinal and Narcotic Anesthesia, Dr. W. Wayne Babcock and Dr. William A. Steele.

Saturday, June 12

11-12 a. m. Obstetric Clinic, Dr. John C. Applegate.
12-1 p. m. Gynecologic Clinic, Dr. Wilmer Krusen.
1-2 p. m. Pediatric Clinic, Dr. James H. McKee.
2-3 p. m. Medical Clinic, Dr. Samuel Wolfe.
3-4 p. m. Ophthalmic Clinic, Dr. Wendell Reber.
4-5 p. m. Surgical Clinic, with Demonstrations of Spinal and Narcotic Anesthesia, Dr. W. Wayne Babcock.
5-6 p. m. Genitourinary Clinic, Dr. William A. Steel.

Correspondence

A National Home for Aged or Invalid Physicians

To the Editor:—The establishment of a national home for aged, incapacitated and invalid physicians is a question which can profitably be considered by the American Medical Association. The broad humanitarianism of such a plan should appeal to our membership; its practicability should insure an early investigation and a report of its advisability.

The project is feasible. That has been demonstrated by labor unions and fraternal orders. In 1892, the Union Printers' Home, the pioneer of such institutions, was dedicated at Colorado Springs, Colo. In the seventeen years which have elapsed since that time every cent of the $800,000 which has been spent in maintenance and in permanent improvements, with the exception of a $10,000 gift and an endowment of $1,000, has come from the ranks of the union. The monthly assessment on each of the 45,000 members was originally ten cents; this was increased a few years ago to fifteen cents, which means half a cent a day, or less than the amount an average printer will earn in a minute's working time. This provides an annual fund of nearly $90,000. More than 1,000 members have been admitted to the Printers' Home; the average number of residents is 150; and the average cost per month $30. The property has a valuation of $1,000,000.

The Modern Woodmen of America, with a membership of 1,000,000, has this winter opened its national sanatorium for the treatment of tuberculosis, north of Colorado Springs. This institution will ultimately involve an expenditure for personal improvements of $500,000 or more, and will provide accommodations for 500, or possibly 1,000 patients. It costs every member of the order ten cents a year.

With a membership of about 32,000, the American Medical Association is assured of ample support in undertaking to build and maintain an institution of this character. An assessment of $2.50 the first year would provide all the money necessary for the purchase of a site and the erection of the necessary buildings. After that, a monthly assessment of five or ten cents would adequately maintain the home.

Such an institution would fill a want in the membership of the Association. To the physician who is no longer able to engage in the practice of his profession because of broken health, it would offer a retreat where he could build up his lost strength and vitality under the most favorable of conditions; to the aged practitioner who still is required by force of circumstances to continue his daily work at a time when his years of active service should entitle him to a rest, it would be a haven of peace. The matter of planning the institution on such broad lines that provision might be made for the care of the families of those who seek its shelter is one that should be given the most careful attention.

This is a humanitarian project of the highest type; it is not charity. Every member of the American Medical Association, on doing his share in the establishment and maintenance of the institution, would by right feel that it truly should be and would be his home should the vicissitudes of life, from which none of us are immune, ever give him reason to seek its kindly shelter. This is a matter which is deserving of the most careful consideration of our membership, and I present it at this time that it may come up for preliminary discussion at least, at the forthcoming convention at Atlantic City.

A. C. MAGRUDER, M.D., Colorado Springs, Colo.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

METHOD OF DETERMINING DIASTOLIC BLOOD PRESSURE

To the Editor:—I have just been reading two articles in German periodicals describing the determination of diastolic blood pressure by the auscultatory method. When I was in Germany last summer, I learned this method from a young German physician in Nauheim and have successfully used it with interest ever since. In none of these articles is mentioned this method, which I have found in practice to be much simpler than any other, and just as accurate.

The method is this: After the physician has determined the systolic pressure by some method involving the circulatory compression of the arm, he relaxes the pressure and says to the patient, "At one time during the examination, you felt a very distinct throbbing of the arm. Now I am going to make the determination over again and I want you to tell me *as soon as* that throbbing returns to as great an extent as you felt it at any time." Then the physician gradually makes pressure on the arm and when the patient says, "Now I feel the throbbing to as great an extent as before," the physician reads the diastolic pressure.

I have tested this method in comparison with the other methods and my personal belief is that with the instruments so far invented, it will be found, in the hands of most observers, more correct than any of them. Of course most of my own experience has been with my own blood-pressure apparatus, using hydrostatic pressure as shown in the accompanying illustration.

I therefore enumerate the diastolic pressure determination methods as follows: (1) the tactile method; (2) the graphic method; (3) by the observation of the fluctuations of pressure; (4) the auscultatory method; (5) the subjective pulsation method, which I employ.

LOUIS FAUGÈRES BISHOP, 54 West 55th St., New York.

DISINFECTION BY FORMALDEHYD

To the Editor:—Please tell me how formaldehyd and potassium permanganate are used in combination as a germicide, and what is the result of the combination. C. C.

ANSWER.—This method was described in THE JOURNAL, July 14, 1906, xlvii, 139, and Jan. 12, 1907, xlviii 159. The action between the potassium permanganate and a part of the formaldehyd produce enough heat to volatilize the greater part of the formaldehyd as formaldehyd gas, which is the disinfecting agent.

RUOTTE'S ANASTOMOSIS OF SAPHENOUS VEIN TO PERITONEUM

To the Editor:—In THE JOURNAL (Nov. 14, 1908, li, 1662), which I have had the pleasure of taking for two years, there is a paper by Alexis Carrel, entitled "Results of the Transplantation of Blood Vessels, Organs and Limbs," in which the following passage appears: "Ruotte cut the saphenous vein and sutured its peripheral end to the peritoneum in a case of chronic ascites. The ascites disappeared." As there is no further mention of the said Ruotte, I apply to you for any possible information in regard to Ruotte's paper.

L. SLAVINSKI, M.D., Warsaw, Poland, Russia.

ANSWER.—Ruotte published his work on the treatment of chronic ascites by anastomosis of the saphenous vein to the peritoneum in *Lyon médical*, 1907, page 574. The title of the paper is "Abouchement de la veine saphène au péritoine comme traitement de l'ascite." In a case of cirrhosis of the liver, the ascites reproduced itself very quickly after puncture. Ruotte dissected and cut the saphenous vein 8 cm. below its mouth, and sutured its peripheral end to the peritoneum just above Poupart's ligament. The ascites disappeared. Several months after the operation, the patient was in good condition and the ascites had not reappeared. In another case, the patient was in a very bad general condition and died a few days after the operation. Post-mortem examination showed that the saphenous vein was normal. On the peritoneum, a little infundibulum was seen at the place of its anastomosis to the saphenous vein. A catheter could easily be introduced from the peritoneum to the femoral vein through the saphenous vein.

The Public Service

Army Changes

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ended May 15, 1909:

Hanson, L. H., 1st lieut., granted leave of absence for fourteen days.

Woodson, R. S., major, granted leave of absence for four months.

Russell, F. F., major, ordered to Philadelphia and New York City, on business of the Medical Department, and then to return to Washington.

Schmitter, Ferdinand, 1st lieut., granted leave of absence for ten days.

Whitmore, E. R., capt., detail with Bureau of Science, Department of the Interior, Philippine Islands, extended one year.

Field, Peter C., capt., ordered to duty at a military tournament at Toledo, Ohio, June 26, 1909.

Chamberlain, W. P., major, granted leave of absence for ten days.

Love, Albert G., 1st lieut., granted leave of absence for fourteen days.

Crosby, E. D., lieut.-col., Kean, J. R., lieut.-col., Ireland, M. W., major, Russell, F. F., major, detailed to represent the medical department of the Army at the meeting of the American Medical Association at Atlantic City, N. J., June 8 to 11.

Thomason, H. D., capt., relieved from duty at Fort Douglas, Utah, and ordered to Fort Missoula, Mont., for duty.

Navy Changes

Changes in the Medical Corps, U. S. Navy, for the week ended May 15, 1909:

Nash, F. S., surgeon, ordered to additional duty at the Marine Recruiting Station, Philadelphia.

Minter J. M., asst.-surgeon, detached from the Naval Recruiting Station, Cincinnati, and ordered to the Naval Medical School Hospital, Washington, D. C., for treatment.

Gardner, J. E., Medical inspector, ordered to additional duty at the Naval Recruiting Station, Boston.

Byrnes, J. C., medical inspector, detached from the *West Virginia* and ordered to the *Tennessee* as fleet surgeon of the Pacific Fleet.

Porter, F. E., P. A. surgeon, detached from the Naval Recruiting Station, Boston, and ordered to the Naval Station, San Juan, P. R., sailing from New York May 22.

Turner, H. W. R., asst.-surgeon, detached from the *Hancock* and ordered to the *Paducah*, sailing from New York about May 21.

Fauntleroy, A. M., P. A. surgeon, detached from Marine Recruiting Office, Philadelphia, and ordered to the *Hartford*.

Health Reports

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended May 14, 1909:

SMALLPOX—UNITED STATES

California: Berkeley, April 17-24, 1 case; Oakland, April 19-26, 2 cases; Sacramento, March, 1-31, 2 cases.
Georgia: Macon, April 25-May 2, 7 cases.
Illinois: Danville, April 25-May 2, 8 cases; Galesburg, April 24-May 1, 1 case; Springfield, April 23-30, 1 case.
Indiana: Fort Wayne, April 17-24, 1 case; Indianapolis, April 25-May 2, 1 case; La Fayette, April 26-May 3, 3 cases; South Bend, April 25-May 1, 3 cases.
Iowa: Cedar Rapids, April 1-30, 2 cases; Council Bluffs, April 25-May 3, 1 case; Sioux City, April 1-30, 1 case.
Kansas: Kansas City, April 25-May 1, 1 case; Wichita, 4 cases.
Kentucky: Lexington, April 25-May 1, 2 cases.
Louisiana: New Orleans, April 25-May 1, 5 cases.
Minnesota: Duluth, April 22-29, 2 cases.
Missouri: St. Louis, April 25-May 1, 1 case.
Montana: State of, March 1-31, 55 cases.
Nebraska: South Omaha, April 3-10, 1 case.
New Jersey: Trenton, April 25-May 1, 2 cases.
New York: Niagara Falls, April 25-May 1, 1 case.
Ohio: Ashtabula, April 25-May 1, 6 cases; Cincinnati, April 23-30, 18 cases; Cleveland, 1 case.
Tennessee: Knoxville, April 25-May 1, 13 cases.
Texas: Hidalgo County, Jan. 15-April 1, 16 cases; San Antonio, April 25-May 1, 4 cases.
Utah: State of, March 1-31, 136 cases.
Washington: Spokane, April 17-24, 6 cases.
Wisconsin: La Crosse, April 25-May 1, 1 case; Superior, 3 cases.

SMALLPOX—INSULAR

Philippine Islands: Manila, March 13-20, 4 cases, 2 deaths.

SMALLPOX—FOREIGN

Brazil: Bahia, March 13-27, 8 cases, 2 deaths; Pernambuco, March 1-15, 5 deaths.
Canada: Halifax, April 17-24, 1 case; Toronto, Feb. 27-April 17, 14 cases.
Ceylon: Colombo, Dec. 12-Jan. 16, 64 cases, 12 deaths.
China: Amoy, March 20-27, present; Hongkong, March 20-April 3, 2 cases.
France: Paris, April 10-17, 1 case.
India: Bombay, March 30-April 6, 17 deaths; Calcutta, March 20-27, 446 deaths; Madras, March 27-April 2, 3 deaths; Rangoon, March 20-27, 3 deaths.
Indo-China: Saigon, March 14-21, 2 cases, 1 death.
Italy: General, April 10-18, 61 cases; Catania, April 10-17, 1 case; Naples, April 11-18, 11 cases.
Java: Batavia, March 13-20, 3 cases.
Mexico: Guadalajara, April 15-22, 1 death; Mexico City, Feb. 27-March 27, 91 deaths; Monterey, April 18-25, 8 deaths; Veracruz, 2 cases, 2 deaths.
Persia: Karmanshah, Feb. 17-March 17, 22 deaths.
Portugal: Lisbon, April 10-17, 6 cases.
Russia: Batoom, Feb. 1-28, 1 case; Moscow, March 27-April 10, 52 cases, 23 deaths; Riga, April 10-17, 2 cases; Warsaw, Feb. 6-13, 2 deaths.
South Africa: Durban, March 20-27, 1 case, imported.
Spain: Almeria, March 1-31, 1 death; Barcelona, April 12-19, 1 death.
Straits Settlements: Penang, March 20-27, 1 case, imported.
Switzerland: Zug, canton, April 11-17, 1 case.
Tripoli: Tripoli, March 27-April 10, 90 cases, 10 deaths.
Uruguay: Montevideo, Feb. 1-28, 11 deaths.

YELLOW FEVER

Brazil: Bahia, March 13-27, 21 cases, 12 deaths; Pernambuco, March 1-15, 1 death.
Ecuador: Guayaquil, March 27-April 3, 18 deaths.
Mexico: San Barnardo, vicinity of Maxcanu, April 24-May 1, 1 case; Ticul, April 10-17, 2 cases.

CHOLERA—INSULAR

Philippine Islands: Provinces, March 13-20, 118 cases, 72 deaths.

CHOLERA—FOREIGN

Ceylon: Colombo, Dec. 12-Jan. 2, 4 cases, 3 deaths.
India: Bombay, March 27-April 6, 14 deaths; Calcutta, March 20-27, 143 deaths; Madras, March 27-April 2, 3 deaths; Rangoon, March 20-27, 4 deaths.
Russia: St. Petersburg, April 16-21, 22 cases, 2 deaths.

PLAGUE

Brazil: Bahia, March 13-27, 5 cases, 1 death.
China: Hongkong, March 20-April 3, 11 deaths.
Russia: General, April 2-8, 2 cases, 1 death.
India: General, March 20-27, 6,059 cases, 5,035 deaths; Bombay, March 30-April 6, 407 deaths; Calcutta, March 20-27, 6 deaths; Rangoon, March 20-27, 16 deaths.
Japan: Formosa, island, March 13-27, 99 cases, 85 deaths; Kobo, vicinity, March 27-April 3, 1 case.
Mauritius: Port Louis, Jan. 1-31, 12 cases, 12 deaths.
Straits Settlements: Singapore, March 13-20, 1 death.
Turkey: Jiddah, April 19-21, 1 case, 2 deaths.

Public Health and Marine-Hospital Service

List of changes of stations and duties of commissioned and other officers of the Public Health and Marine-Hospital Service for the seven days ended May 12, 1909:

Carmichael, D. A., surgeon, granted 14 days' leave of absence from May 26, 1909.

Wertenbaker, C. P., surgeon, detailed to represent the Service at the annual meeting of the National Association for the Study and Prevention of Tuberculosis to be held in Washington, D. C., May 13-15, 1909.

Lavinder, C. H., P. A. surgeon, granted 4 days' leave of absence en route to Columbia, S. C.

Lumsden L. L., P. A. surgeon, granted 7 days' leave of absence from May 10, 1909, under paragraph 191 Service Regulations.

Warren, B. S., P. A. surgeon, detailed to represent the Service at the meeting of the Arkansas State Medical Society to be held at Pine Bluff, Ark., May 19-21, 1909.

Collins, G. L., P. A. surgeon, granted 3 days' leave of absence from April 30, 1909, under paragraph 189 Service Regulations.

Pettyjohn, Joseph, P. A. surgeon, on arrival of Asst.-Surgeon J. R. Hurley, directed to proceed to San Francisco.

Marshall, E. R., asst.-surgeon, granted 2 days' leave of absence from May 13, 1909.

Ames, R. P., acting asst.-surgeon, directed to proceed to Gualan, Guatemala, and other places on line of Guatemala Railway to observe sanitary conditions.

Foster, J. P. C., acting asst.-surgeon, granted 4 days' leave of absence from May 13, 1909.

Goldsborough, B. W., acting asst.-surgeon, granted 5 days' leave of absence from May 12, 1909, without pay.

Hume, Lea, acting asst.-surgeon, directed to proceed to Del Rio, Texas and vicinity.

Rodman, John C., acting asst.-surgeon, granted 14 days' extension of leave from April 13, 1909, on account of sickness.

Stearns, H. H. acting asst.-surgeon, granted 2 days' leave of absence, April 12 and 14, 1909, under paragraph 210, Service Regulations.

Forgy, M. C., acting asst.-surgeon, granted 2 days' leave of absence from April 18, 1909.

BOARDS CONVENED

Board of medical officers convened to meet at the Marine Hospital office Galveston, Texas, May 12, 1909, for the purpose of making a physical examination of an applicant for the position of cadet in the Revenue-Cutter Service. Detail for the board: P. A. Surgeon G. M. Corput, chairman; Acting Asst.-Surgeon Wm. H. Gammon, recorder.

Board of medical officers convened to meet at the Marine Hospital, Baltimore, as soon as practicable, for the purpose of making a physical examination of an applicant for the position of cadet in the Revenue-Cutter Service. Detail for the board: P. A. Surgeon G. M. Corput chairman; Acting Asst.-Surgeon Wm. H. Gammon, recorder.

Board of medical officers convened to meet at the Marine Hospital, Baltimore, as soon as practicable, for the purpose of making a physical examination of a First Lieut., U. S. Revenue-Cutter Service. Detail for the board: Surgeon W. P. McIntosh, chairman; P. A. Surgeon M. K. Gwyn, recorder.

Boards of medical officers convened to meet on May 15, 1909, for the purpose of making physical examinations of officers of the Revenue-Cutter Service for promotion, as follows:

Portland, Me. Surgeon P. C. Kalloch, chairman; Acting Asst.-Surgeon A. F. Stuart, recorder.

Boston. Surgeon L. L. Williams, chairman; Passed Asst.-Surgeon T. W. Salmon, recorder.

New York. Passed Asst.-Surgeon C. W. Vogel, Chairman; Asst.-Surgeon F. A. Ashford, recorder.

Baltimore. Surgeon W. P. McIntosh, chairman; P. A. Surgeon M. K. Gwyn, recorder.

Norfolk, Va. P. A. Surgeon G. L. Collins, chairman; Acting Asst.-Surgeon R. W. Browne, recorder.

Galveston, Tex. P. A. Surgeon G. M. Corput, chairman; Acting Asst.-Surgeon W. H. Gammon, recorder.

Board of commissioned medical officers will be convened to meet at the Bureau, Monday, June 14, 1909, for the examination of applicants for the position of Assistant Surgeon in the Public Health and Marine-Hospital Service.

Marriages

HAROLD WARD DANA, M.D., to Miss Gertrude Veronica Quinn, both of Boston, May 6.

HARRY R. SPICKERMON, M.D., to Mrs. Lela Fay Spickermon, both of Muncie, Ind., recently.

GEORGE ROGER MYERS, M.D., Hurlock, Md., to Miss Edna Wright, at Hurlock, April 28.

ROLAND B. MACON, M.D., to Mrs. Adele Slayden Cross, both of Clarksville, Tenn., May 4.

WILLIAM A. RAIMAN, M.D., to Miss Rebecca Checkwood, both of Swarthmore, Pa., recently.

ARTHUR MARRIOTT SHIPLEY, M.D., to Miss Julia Armistead Joynes, both of Baltimore, May 6.

JOSEPH EDWARD PIRRUNG, M.D., Cincinnati, to Miss Adele Heile, of Covington, Ky., April 20.

WILLIAM C. ELLIOTT, M.D., Holly Springs, Miss., to Miss Mary A. Hughes, of Memphis, recently.

ARTHUR RANDOLPH GREEN, M.D., to Miss Florence Elizabeth Seeley, both of New York City, May 5.

FERDINAND LEO KIEFFER, M.D., Covington, Ky., to Miss Bertha Grau of Newport, Ky., May 5.

M. HEMINWAY MERRIMAN, M.D., New York City, to Miss Mallory Betts, of Norwalk, Conn., May 3.

JAMES ROYDAN PEABODY, M.D., Colorado Springs, to Miss Annie Hodgson Long of Louisville, Ky., May 11.

Deaths

John M. Boyd, M.D. University of Pennsylvania, Philadelphia, 1856; a member of the American Medical Association; surgeon in the Confederate service throughout the Civil War; chief of staff of the Knoxville (Tenn.) General Hospital since its foundation; president of the board of trustees of the Tennessee Deaf and Dumb School; a member of the board of trustees of the University of Tennessee; died at his home May 16, aged 75.

Henry Albert Crandall, M.D. Castleton (Vt.) Medical College, 1859; a member of the Vermont State Medical Society and a charter member of the Burlington Medical and Surgical Club; physician to the Mary Fletcher Hospital, Burlington; assistant surgeon of the Sloan General Hospital, Montpelier, during the Civil War; in 1891 health officer of Burlington; died at his home from cerebral hemorrhage, May 6, aged 77.

Dorrance William Aldrich, M.D. Bellevue Hospital Medical College, New York City, 1874; a member of the American Medical Association; a veteran of the Civil War; in 1886 appointed local surgeon for the Burlington System at Galesburg, Ill.; in 1876, 1880 and 1884, coroner of Knox county for two-year terms; and once mayor of Galesburg; died at his home, May 8, aged 63.

Charles John Sharretts, M.D. College of Physicians and Surgeons, New York City, 1878; of New York City; attending physician to the Montefiore Home; visiting physician to the Church Charities Hospital, Astoria, L. I.; for many years examiner for the Metropolitan Life Insurance Company; died at his home in Flushing, L. I., May 7, aged 54.

Roger Brooke, M.D. University of Maryland, Baltimore, 1887; a member of the American Medical Association, and once vice-president of the Medical and Chirurgical Faculty of Maryland; died at his home near Sandy Spring, Md., May 9, from heart disease, aged 63.

James McMahon, M.D. Upper Canada School of Medicine, Toronto, 1850; for fifteen years chief of the law stamp office, Osgoode Hall, Toronto; and from 1875-1894 member of the Provincial Parliament for North Wentworth; died suddenly at his home in Toronto, April 23, from cerebral hemorrhage, aged 87.

I. Winslow Ayer, M.D. Eclectic Medical Institute, Cincinnati, 1860; of Northville, Mich.; who during the Civil War, practically unassisted and impelled only by patriotism, unmasked the "Confederacy of the Northwest;" died in the Wayne County Hospital, April 29, aged 83.

William Peale Brewer, M.D. Medical College of Virginia, Richmond, 1864; of New Orleans; a Confederate soldier and later transferred as assistant surgeon to the medical corps; for two years surgeon to the Confederate Veteran Soldiers' Home; died in Touro Infirmary, May 5, a few days after an operation for appendicitis, aged 67.

Clarence Bentley Paul, M.D. Marion-Sims College of Medicine, St. Louis, 1893; a member of the Iowa State Medical Society; supreme medical director of the Homesteaders; and one of the founders of the Brotherhood of American Yeomen; died suddenly at his home in Des Moines, May 8, from heart disease, aged 48.

William D. Wells, M.D. Memphis Hospital Medical College, Memphis, Tenn., 1894; formerly of Gans, Okla.; a member of the American Medical Association; died in the Sebastian County Hospital, Fort Smith, Ark., May 2, from the effects of chloral, supposed to have been taken with suicidal intent.

William H. Shultz, M.D. Indiana Medical College, Indianapolis, 1871; a member of the Indiana State Medical Association; a veteran of the Civil War; formerly president of the local board of U. S. Pension Examining Surgeons of Lebanon; died at his home in that city, May 6, from influenza, aged 48.

William Stanbury Plotner, M.D. Western Pennsylvania Medical College, Pittsburg, 1888; the first student to enroll in that institution and valedictorian of his class; a member of the Turtle Creek Valley Medical Society; died at his home in East Pittsburg, Pa., May 8, from disease of the liver, aged 48.

John Jones Burroughs, M.D. New Orleans School of Medicine, 1860; Bellevue Hospital Medical College, New York City, 1875; Jefferson Medical College, Philadelphia, 1876; a surgeon in the Confederate Service during the Civil War; died at his home in Houston, Texas, May 3, aged 78.

Noyes B. Prentice, M.D. Starling Medical College, Columbus, Ohio, 1855; Western Reserve University, Cleveland, 1857; for two terms United States marshal; one of the oldest practitioners of Cleveland; died at his home in that city, May 1, from pneumonia, aged 80.

Paul A. Barrier, M.D. Long Island College Hospital, Brooklyn, 1860; a member of the American Medical Association; surgeon in the Confederate service during the Civil War; died at his home in Mount Pleasant, N. C., May 5, from cerebral hemorrhage, aged 76.

Benjamin A. Jaudon, M.D. Jefferson Medical College, Philadelphia, 1853; surgeon in the Confederate service during the Civil War; president of the Marion County (Mo.) Savings Bank; died suddenly at his home in Palmyra, April 30, aged 76.

Landon Spray Murray, M.D. University of Wooster, Cleveland, Ohio, 1868; of Medina, Ohio; a member of the American Medical Association; died at the home of his niece in Seville, Ohio, April 29, from acute cardiac dilatation, aged 69.

Benjamin J. Fulkerson, M.D. New York University, New York City, 1881; a member of the American Medical Association and the Tyrone Medical Club; died at his home in Tyrone, Pa., from nephritis, May 6, aged 54.

Henry Clay Lane, M.D. Western Pennsylvania Medical College, Pittsburg, 1902; a member of the Turtle Creek Valley Medical Association; died at his home in East Pittsburg, Pa., May 7, from heart disease, aged 32.

David W. Riggs, M.D. Jefferson Medical College, Philadelphia, 1861; a surgeon in the Federal service during the Civil War; of Northside, Pittsburg, Pa.; died in Rochester, Minn., from pneumonia, May 7, aged 75.

Frederick Augustus Cutter, M.D. Bellevue Hospital Medical College, New York City, 1865; McGill University, Montreal, 1873; of Sutton, Que.; died at the home of his son in Berkeley, Cal., May 8, aged 66.

William Henry Finn, M.D. Harvard Medical School, Boston, 1863; surgeon in the Navy during the Civil War; a member of the Philadelphia Historical Society; died at his home in Philadelphia, May 5, aged 74.

Carey William Howe, M.D. University of Buffalo, N. Y., 1860; assistant surgeon of the One Hundred and Sixteenth New York Volunteer Infantry during the Civil War; died at his home in Buffalo, May 7.

Edward S. Carr, M.D. Jefferson Medical College, Philadelphia, 1874; a member of the Tennessee State Medical Association; died at his home near Castalian Springs, May 7, from cerebral hemorrhage, aged 56.

Henry W. Bishoff, M.D. University of Pennsylvania, Philadelphia, 1866; a member of the Dauphin County Medical Society; died suddenly at his home in Halifax, Pa., February 1, from myocarditis, aged 72.

Christian M. Schulte, M.D. Washington University, Baltimore, 1876; at one time ward physician in the health department of Baltimore; died at his home in that city, May 5, from pneumonia, aged 58.

William Davis Tanner, M.D., a veteran of the Mexican War; who practiced in White county, Ill., from 1850 to 1870; died at his home in Denver, April 8, from senile debility, aged 85.

George H. Thrash, Jr., M.D. Chattanooga (Tenn.) Medical College, 1892; died at the home of his father in Hominy, N. C., May 3, from septicemia, due to an operation wound, aged 40.

Luther J. Cranfill, M.D. Fort Worth (Texas) University, 1903; of Loco, Okla.; a member of the Oklahoma State Medical Association; died on a train near Fort Worth, Texas, April 25, aged 50.

George W. Eager, M.D. College of Physicians and Surgeons, New York City, 1846; for twenty-four years postmaster of Montgomery, N. Y.; died at his home in that place, April 23, aged 84.

Henry R. Given, M.D. Rush Medical College, Chicago, 1871; a member of the Nebraska State Medical Association; died at his home in Wymore, April 18, from diabetes, aged 62.

Nathaniel M. Smith, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1881; died suddenly in his apartments in Marion, Kan., May 3, from heart disease, aged 58.

Elwyn Ashworth Holroyd, M.D. Rush Medical College, Chicago, 1879; died at his home in Chicago, May 13, from hemorrhage of the lungs, due to pulmonary abscess, aged 57.

Joel Eff Buckman, M.D. Barnes Medical College, St. Louis, 1904; of Modesto, Ill.; died at the home of his parents in Farmingdale, Ill., May 3, from tuberculosis, aged 30.

Marinda Emily Fullam, M.D. Northwestern University Woman's Medical School, Chicago, 1886; died at her home in Aurora, Ill., January 5, from paralysis, aged 68.

Velmore Huse, M.D. Baltimore Medical College, 1898; of New York City; died in the Austin Hospital, New York City, May 7, from appendicitis, aged 34.

O. W. Morris, M.D. Indiana Eclectic Medical College, Indianapolis, 1893; died at his home in Elwood, Ind., May 5, from cerebral hemorrhage.

Timothy Edward McOwen, M.D. Harvard Medical School, Boston, 1885; of Lowell, Mass.; died at St. John's Hospital in that city, May 5, aged 47.

John W. Megee, M.D. Beaumont Hospital Medical College, St. Louis, 1889; died at his home in Clarence, Mo., April 29, from tuberculosis, aged 53.

Robinson Peter Corbett (license, Ohio, 1896; years of practice); died at his home in St. Louisville, Ohio, from senile debility, May 8, aged 82.

Ephraim H. Harris, M.D. New York Medical College, New York City, 1866; died at his home in Grinnell, Iowa, May 5, from paralysis, aged 79.

James McGuffin, M.D. Electropathic Institute, Philadelphia, 1877; of Milwaukee; died at the Layton Home in that city, May 6, aged 80.

Charles C. Phillips, M.D. Philadelphia College of Medicine and Surgery, 1853; died at his home in Pitman, N. J., April 22.

Daniel Webster Durrett, M.D. University Medical College, Kansas City, Mo., 1900; of Pawnee, Okla.; died at the home of his brother near Emden, Mo., April 23, from tuberculosis, aged 38.

Henry Barnett, M.D. Eclectic College of Maine, Lewiston, 1887; died at his home in Lancaster, N. H., April 29, aged 52.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

The Medical Profession and Vital Statistics

The May number of the *Ohio State Medical Journal* states that J. J. Boone of Mt. Victory has been arrested for failure to comply with the vital statistics law, he having refused to report deaths because the law does not provide pay for such service. It is proposed to make this a test case to determine whether the state has a right to require compulsory service of professional men without providing compensation.

Commenting on the case, the Ohio editor says, "Every profession, whether law, journalism, education, medicine, the ministry, etc., primarily exists in the interests of the public. The organized effort of each one is directed to this end. Failing in this it would degenerate and fail of its own mission. The state, recognizing the functions of the various professions toward the people, enacts and enforces laws to conform to professional standard. Vital statistics stand in relation to the public good. The organized medical profession appreciates this fact and has been instrumental in securing the vital statistics law. All sanitary laws represent the progress of the medical profession. Professional standards are expressed in the language of state medicine. Medical licensure by the state is intended to safeguard public interests and imposes those conditions of qualifications and public service which the right to practice medicine implies. Men whose occupations stand in relation to the public health are required to conform to certain rules of conduct . . . laws are passed in the interest of the people and not especially for the medical profession. They are intended for the physician to obey. . . . It is a foregone conclusion that the courts will not grant special favors to physicians under the operations of the vital statistics act."

The only legal justification which can be found for the requirement by the state of a license on the part of a practicing physician is that the legally qualified physician occupies the position of a quasi-public official and that in return for the performance of certain duties he is granted certain special privileges. It is necessary for the good of the community that carefully compiled statistics should be available regarding the causes of death. To be of any value such statistics must be based on reports from competent persons, that is from legally qualified and recognized physicians. The duty of making reports of births and deaths therefore is a part of the implied contract by which the physician holds a license from the state authorizing him to practice medicine. As every attorney who is admitted to the bar by the profession of his state is regarded, in a sense, as an officer of the state, so every legally qualified physician should be regarded, in a sanitary and hygienic sense, as a state health officer. The duty of reporting births and deaths is one of the most important of his obligations and should not for a moment be neglected nor should the state be expected to provide a nominal compensation for such service. If the physician were on the same plane as the grocer or dry-goods merchant, he could reasonably refuse to perform any service unless he were compensated therefor. The groceryman, however, does not receive any license from the state, neither does he ask the state to prevent any except legally qualified grocerymen from engaging in business. When the medical profession assumes the position of a specially qualified and privileged class, it must recognize the duties and obligations of such a class as well as the advantages. The enforcement of the new Ohio law regulating vital statistics is of great importance at the present time.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Tenth Month—Fourth Weekly Meeting

ACUTE MASTOIDITIS

Causes, general and local, symptoms and physical signs, prognosis, abortive treatment. Operative treatment, indications, technic.

SUBPERIOSTEAL ABSCESS IN ACUTE MASTOIDITIS.—Diagnosis and treatment.

ACUTE MASTOIDITIS IN INFANTS.—Differences in temporal bone, in symptoms; treatment.

CHRONIC MASTOIDITIS

Pathology, symptoms. Radical mastoid operation, indications, technic, dangers. Intracranial complications, frequency, mortality. Sinus phlebitis and sinus thrombosis, pathology, symptoms, treatment. Otitis brain abscess, symptoms, diagnosis. Cerebellar abscess, symptoms, diagnosis. Infective meningitis, pathology, diagnosis, prognosis.

CHRONIC NON-SUPPURATIVE OTITIS MEDIA

Causes, pathology, diagnosis. Palliative and surgical treatment.

OTOSCLEROSIS.—Causes, diagnosis, treatment.

LABYRINTHINE DISEASES.—Causes, diagnosis

MONTHLY MEETING

The Early Diagnosis and Treatment of Acute Catarrhal and Purulent Otitis Media.

The Relation of Nasopharyngeal Diseases and Obstructions to Diseases of the Ear.

The Symptomatology and Diagnosis of Acute Mastoiditis.

END OF SECOND YEAR COURSE

The program for the last meeting of the tenth month as given above, concludes the outline of the second year of the Postgraduate Study Course. The publication of the third year outline will begin in September.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, JUNE 8-11.

American Academy of Medicine, Atlantic City, June 5-7.
Am. Assn. of Genito-Urinary Surgeons, Pocono, Pa., May 31-June 1.
Am. Assn. of Med. Milk Commissions, Atlantic City, June 7.
Am. Climatological Association, Fortress Monroe, Va., June 4-5.
American Dermatological Association, Philadelphia, June 3-5.
Am. Gastro-Enterological Association, Atlantic City, June 7-8.
American Gynecological Society, New York, May 27-29.
American Laryngological Association, Boston, May 31-June 2.
American Laryn., Rhin. and Otol. Society, Atlantic City, June 3-5.
American Medico-Psychological Assoc., Atlantic City, June 1-4.
American Neurological Association, New York, May 27-29.
American Orthopedic Association, Hartford, Conn., June 14-16.
American Pediatric Society, Lenox, Mass., May 27-28.
American Proctologic Society, Atlantic City, June 7-8.
American Surgical Association, Philadelphia, June 1-3.
American Urological Association, Atlantic City, June 7.
Con. of State and Prov. Bds. of No. Am., Washington, June 4-5.
Connecticut State Medical Society, Hartford, May 26-27.
Maine Medical Association, Portland, June 16-17.
Massachusetts Medical Society, Boston, June 15-16.
Natl. Con. State Med. Ex. and Licensing Bds., Atlantic City, June 7.
New Jersey Medical Society, Cape May, June 23-25.
Rhode Island Medical Society, Providence, June 1.
Wisconsin State Medical Society, Madison, June 30-July 2.

LOUISIANA STATE MEDICAL SOCIETY

Thirtieth Annual Meeting, held at New Orleans, May 4-6, 1909

The President, Dr. E. DENEGRE MARTIN, in the Chair

Election of Officers

The officers elected were named in THE JOURNAL, May 15.

Contribution to Carroll Fund

A resolution was adopted that $150 be appropriated toward the fund for the relief of the widow of Major Carroll.

Prophylactic Serotherapy and the Theory of Anaphylaxis

DR. I. I. LEMANN, New Orleans: While anaphylaxis has been widely discussed during the past three years by workers in the field of immunity, it has received comparatively little attention in general societies and medical journals, this paper presents a brief summary of the literature and I ask: What shall be our attitude in regard to prophylactic injections of serum in the light of probable subsequent anaphylactic reactions? An experience which I had in January, 1907, illustrates one phase of the anaphylactic reaction. The patient, a girl of thirteen, frequently had sore throat, and on many of these occasions the attacks suggested diphtheria. During one of them, in November, 1903, she was given an injection of diphtheria antitoxin, but a swab culture taken at the time proved negative. At the time there were no symptoms of serum disease. In the last days of December, 1906, she had another of her customary attacks and the same thing was done; again the culture was negative. Twenty-four hours after the injection she developed a general urticaria, and the pulse became abnormally slow, although the temperature remained about 101 F. During the next twenty-four hours the pulse was as slow as 40 a minute. For several days the bradycardia continued and was gradually substituted by a tachycardia, which reached 120; this was associated with marked irregularity and intermission. There were no murmurs and there was no enlargement of the heart. This tachycardia continued for a year, while the irregularity of the cardiac action as manifested by undue hastening of the pulse on slight exertion continued for eighteen months. While we must insist on serum inoculations as a therapeutic measure of the highest value, how must we look on prophylactic injections in the light of possible subsequent anaphylaxis? I confess that after my experience I have given up the old rule of injecting antitoxin in doubtful cases at the time of taking the swab culture and have awaited the result of the bacteriologic examination. In this way, I have avoided, I think, unnecessary sensitizings and hence unnecessary risk in case of future urgent need of the employment of serum. About prophylactic injections I am inclined to feel the same way.

DISCUSSION

DR. J. T. HALSEY, New Orleans: I have had two experiences similar to that of Dr. Lemann, and the lesson I have drawn is to avoid unnecessary antitoxin injections.

DR. C. C. BASS, New Orleans: Admitting that anaphylaxis exists, we must not lay too much stress on it, or we will do more harm than good. When it is possible to make a culture in a suspected case of diphtheria, it is probable that we should not administer serum until a diagnosis is made. As a prophylactic measure we will probably in the future use bacterial vaccines.

DR. L. G. LEBEUF, New Orleans: I think some work ought to be done to determine which patients may receive injections with safety and which may not. Is any work being done along that line?

DR. I. I. LEMANN: The remarks I made do not apply to the therapeutic use of the serum. Klemperer has made a suggestion that we could determine whether or not it would be safe to give serum to a given individual by taking a small amount of blood from that individual and injecting it into a guinea-pig and then injecting the guinea-pig with horse serum also. If the guinea-pig reacts anaphylactically, it is unsafe to give the patient horse serum. It is plain, however, that this is not practical.

Treatment of Tuberculosis at Covington Sanatorium

DR. WALLACE J. DUREL, New Orleans: This report includes cases treated from 1905 to 1907. In all, 59 patients were treated. Of these, 2 were in the first clinical stage; 15 in the second; 21 in the third; 21 in the fourth. In 7 cases there was laryngeal involvement, 4 of the cases ending in recovery, and 3 in no improvement. In 11 cases there were stomach or digestive disorders, 4 ending fatally. Two patients suffered with joint tuberculosis; both recovered. The great percentage of the patients reported here as apparently cured had already followed the climatic treatment, without any benefit, before undergoing the hygienic-dietetic treatment. Most of the individuals were given tuberculin and creosote. The total percentage of results was as follows: First clinical stage, 100 per cent. apparent cure or complete recovery; second clinical stage, 100 per cent. apparent cure or complete recovery; third clinical stage, 57.1 per cent. apparent cure or complete recovery, 23.8 per cent. disease arrested, 19.1 improved, no mortality; fourth clinical stage, 19.1 per cent. disease arrested, 28.5 per cent. improved, 38.1 per cent. mortality. These statistics, while not large, should convince physicians that the cure of tuberculosis is not entirely dependent on climate.

(*To be continued*)

OHIO STATE MEDICAL ASSOCIATION

Sixty-fourth Annual Meeting, held at Cincinnati, May 5-7, 1909

President's Address: History of the Association

DR. D. R. SILVER, Xenia: The history of the organization may be divided into four periods, the first extending from 1812, when just five delegates were present. These men made a winter journey of more than 100 miles on horseback over the corduroy roads of that time, nearly a century ago. In 1827, fifteen years later, a convention was held at Columbus, with Dr. Wooley, of Cincinnati, as president, at which time a plan and constitution for a state medical society was adopted, the first session of which was to convene in 1829. However, the organization seems never to have proceeded beyond the convention form, and was operated under the old district medical law, which was repealed in 1833. The second period of medical history dates from January, 1835, when Dr. William Awl, of Columbus, issued a circular letter to all regular and scientific medical practitioners who were desirous to advance the honor and dignity of the profession, to meet in convention. They did meet, and Dr. Daniel Drake was one of the leading spirits. He gave an address urging the establishment of a school for the instruction of the blind. Under this system medical conventions continued to be held until May, 1846, when the Ohio State Medical Society was organized at the Neil House in Columbus, and the enrollment of membership numbered 25. Thus commenced the third

period of medical history in Ohio. The fourth period began with the reorganization in 1902, when the membership was about 1,000. The work of Dr. McCormack, in Ohio, has contributed not a little to a more perfect organization of the profession and a great deal to the education of the people of the state. The senatorial candidacy of Dr. C. A. L. Reed can not fail to have a far-reaching influence in shaping future legislation. Optometry is the most plausible of any of the pretensions of quackery, and to oppose this form of charlatanry I recommend that the component societies provide for the reading of papers in the annual programs on the subject of refraction and other anomalies of vision. The Ohio Commission for the Blind, which was inaugurated at the instance of the American Medical Association, is doing good work. I also recommend the establishment of tuberculous sanatoria, and that the medical profession take an active interest in directing the laity, so that there may be no mistake there in political influence. Vasectomy should be performed on habitual criminals because the propagation of the criminal classes is said to be more than twice as great as the general population. In the election of delegates to the American Medical Association I recommend that the secretary of the state society and the chairman of the legislative committee be ex-officio delegates to the parent society, and that the other four delegates, to which we are entitled, be elected for a period of four years instead of two, for the purpose of obtaining greater influence in the deliberations of the national association.

Report of Committee on Public Policy and Legislation

The optometry bill, providing for a state examining and licensing board, was introduced in the senate, but not reported out of committee. A bill to give authority to boards of education for the medical inspection of public school children was enacted. An attempt to introduce a bill looking to the creation of a state examining board for nurses was frustrated. A suggestion that the house of delegates adopt resolutions placing the association in cooperation with the temperance movement in Ohio, by urging all members to comply with the intent of prohibition laws in exempting alcoholic preparations when prescribed for medicinal purposes, was duly carried out. The committee reiterated the defensive attitude necessary to be taken by the association in order to protect the Medical Practice Act against the invasion of cults and classes who are constantly seeking recognition by the state for the favor of practicing medicine in some of its branches without proper qualification before the state board.

Reports of Officers

The treasurer reported that the amount received last year from dues was $3,962.00, representing so many members of the association. The amount received from subscription, $5.00; from advertising, $3,214.00, making a total of $7,355.00, of which $7,226.00 was paid out, leaving a balance on hand of $129.00.

Election of Officers

The officers elected were named in THE JOURNAL, May 15.

Multiple Myeloma

DR. GEORGE F. ZINNINGER, Canton: Judged by their histopathologic structure, in that they have a definite specific cell and a connective tissue and blood vessel stroma, together with the fact that they show distinct evidence of invasive growth by breaking through bony walls and infiltrating adjacent structures, one can hardly hesitate to regard these tumors as true neoplastic growths. If on the other hand the multiple tumors are not metastases into a single system, but tumors all of multiple inception, this seems to lend support to the view that they are due to some generalized disease most probably of an infectious etiology. These tumors always arise in the bone marrow, proliferating, and producing erosions of the bones in which they arise. In their histopathologic structure similarity is to be noted in the description of the various authors reporting the cases. They all speak of a tumor made up of a delicate stroma of connective tissue; in the meshes of the stroma are packed cells which may be round, but more often are oval or pear-shaped, having no cell wall, bearing a rather large single or multiple nucleus usually eccentrically placed and in most of them nuclei are to be found. The tumors are very vascular; the larger and smaller blood vessels ramify in the sparse connective tissue stroma. The vessels are thin-walled, and the tumor cells are in intimate relationship with the vessels. Clinically, there is constant pain over definite areas of bone having a cancellous structure, the bone developing a bulging swelling, the appearance later of definite soft tumor masses. The patient shows some emaciation, growing pallor, anemia and weakness, all of which are strongly suggestive of multiple myeloma.

Aspects of Angina Pectoris

DR. FRANK WINDERS, Columbus: A study of this subject may well be preceded by the statement that angina pectoris is not a distinct disease, but rather a symptom group, the etiology and pathology of which must be determined for each individual case. I accept the classification of Nothnagel, who distinguishes angina pectoris major, in which there are definite anatomic changes in the heart or its vessels, from angina pectoris minor, in which no such changes can be demonstrated. So-called minor cases are not infrequently as grave in their prognosis as the major cases. Cases which at autopsy show lesions of the heart or its vessels present either (a) disease at the first portion of the aorta or at the aortic valve, which causes interference with the entrance of blood into the coronary arteries; or (b) disease of the coronary arteries. The association of attacks of angina and disturbance of digestion has long been recognized, but it remained for Russell to give a plausible explanation of this relation. This author directs attention to the normal arterial abdominal reflex and its exaggeration as an important factor among the causes of angina pectoris. An additional factor has to do with the increase of blood pressure, following the ingestion of heavy foods and stimulating drinks and is the presence in the blood itself of products of digestion which act as irritants to the arterial coats, thereby exciting them to contraction. A continuation of these influences results in a continued arterial contraction and this in turn in a compensatory thickening of the arterial walls. Cardiac embarrassment results from the foregoing causes. A general arterial hypertonus produces a narrowing of the lumen of the vessels, which in turn causes an increase in blood pressure, and thus an increased burden is placed on the heart in its efforts to empty the left ventricle.

(*To be continued*)

MISSISSIPPI STATE MEDICAL SOCIETY

Forty-second Annual Meeting, held at Jackson, April 13, 1909

(Continued from page 1610)

The Hypodermatic Use of Quinin in Severe Malarial Infection

DR. B. H. BOOTH, Drew, advocated the hypodermatic use of quinin, especially in treating children. It was more effective by this manner of administration and by so using it we avoided irritating the stomach. The administration by needle reduced the amount and number of doses and was really less objectionable than the discomfort produced by the nauseous taste of the drug. The danger of abscess formation was not great when proper care in administering and proper asepsis were observed. Any soluble salt might be used, his preference being the bimuriate.

DISCUSSION

DR. GLASS, Coahoma: In administering quinin hypodermically, too small a syringe is generally used. I have found in using the ordinary hypodermic syringe that the solution was too concentrated, too irritating; therefore, I use my antitoxin syringe, dissolving the quinin in a saline solution. When given in this way one can usually note the effect of the quinin in about forty minutes. It is important that the solution be sufficiently diluted.

DR. E. H. MARTIN, Hot Springs, Ark.: When it is necessary to administer quinin hypodermically, it should be dis-

solved in a sufficient quantity, preferably a saline solution, to insure absorption. Given in this way, there is little danger of abscesses.

DR. G. H. MCNEILL, Newton: A sufficiently diluted solution can be administered with the small syringe, by detaching the bulb and refilling it as often as desired, and this can be done with only one insertion of the needle. I say this for the benefit of the physician who does not possess a large syringe.

DR. DULANEY: I am much gratified to note that the profession is getting back to the use of quinin. In administering this drug hypodermically, I dissolve 5 grains of quinin in 30 drops of water; I have no trouble with abscesses, and usually obtain good results.

DR. H. CHRISTMAS, Tehula: A physician of many years' practice was sent for in a case of hematuria. When he arrived he questioned the young physician in attendance as to what he had done for the man. The doctor replied that he had blistered him, given calomel and almost a bottle of quinin. The older physician then suggested giving the man a rest; giving him a hypodermic of atropin and something to eat, and see what the effect would be. The next morning the man was much better, and eventually recovered. He then told the young doctor the man was dying of too much doctor, and not from the disease.

DR. ASHLEY: Have any patients complained of intense pain when given quinin hypodermically? I was given quinin hypodermically and my suffering was almost unbearable. The first two injections were not so painful, but the others caused intense pain. It did not cause abscesses, only the usual knot, which I still have. The quinin was given in very diluted form, and with good effect as to the disease.

DR. COOK, Forest: Possibly the bad effects resulting from giving quinin hypodermically are caused by giving it under the skin; if injected deep into the muscles there would be no danger of abscesses. I had a patient who could not take quinin by mouth without producing a rash. She was very ill, and all other remedies had failed. I gave a diluted solution of quinin bimuriate hypodermically, putting the needle deep into the muscles. No bad effects followed, and the patient recovered.

DR. H. L. SUTHERLAND, Rosedale: I suppose that all physicians are of the opinion that quinin is the only safe remedy in malaria. The main thing, however, is to determine whether the condition is active malaria, or anemia secondary to malaria. If repeated examination of the blood does not reveal the parasite, I see no use in giving quinin, but if the examination reveals the parasite, I always give quinin. In giving it hypodermically, if in a weak solution, and the needle is put deep into the muscles, there is little danger of abscesses.

DR. B. H. BOOTH: I hope that I made it clear in the paper that if care is taken not to strike a vein there is little or no pain in the hypodermic administration of quinin.

Puerperal Eclampsia

DR. L. D. HARRISON, Clarksdale, advocated bleeding in eclampsia. The preventive treatment, the care of the patient during pregnancy, must not be neglected but when brought face to face with the condition no time is to be lost and blood should be taken, the idea being to bleed for effect and not for quantity.

DISCUSSION

DR. M. ALEXANDER, Tunica: In the days of bloodletting, this disease was looked on with dread by all practicing physicians. I can not understand why a physician should go back to the dark ages for a remedy when there is such a remedy at hand as veratrum, which in my opinion is almost specific in puerperal eclampsia, eliminating urea, which to a great extent has poisoned the system, and relieving the pressure on the nervous system.

DR. JONES: I believe in the old fogy idea, if you have a good thing, stick to it. In puerperal convulsions I consider blood letting a safe remedy. In cases of puerperal eclampsia what is needed is complete relaxation both inside and outside.

DR. M. C. ELLIS, Senatobia: When I find that I can not control convulsions with veratrum, and the pulse was still bounding, I bleed, and bleed for effect—bleed until the pulse is slower.

DR. A. E. KENNEDY, Magee: I believe in calomel in puerperal eclampsia, and plenty of it. In a case that I had some years ago, I gave 60 grs. of calomel, followed by an ounce of castor oil. The woman recovered.

DR. P. BUTLER, Little Springs: I treated the first cases of puerperal eclampsia that I had by bleeding, but in my hands bleeding was not satisfactory. Since I began to use veratrum, followed by bichlorid of mercury, I have not lost a patient with puerperal eclampsia.

DR. R. M. DONALD, Hattiesburg: In puerperal eclampsia I give large doses of veratrum, repeated if necessary, and just as soon as I can get the patient to take it, I give calomel in large doses.

DR. L. D. HARRISON: Dr. Alexander stated that he could not remember so far back when this ancient remedy of bloodletting was resorted to, but I can refer to authorities as late as 1906-1908 who advocate bloodletting in puerperal eclampsia. Veratrum, I contend, weakens the heart action, and does not aid elimination. I have never seen a case of puerperal eclampsia that was not relieved by bloodletting. I have seen patients die from all the treatments named, but I have never yet seen one die from bloodletting. The other remedies are not quick enough in their effect.

Hygiene and Prophylaxis in the Care of Children

DR. O. N. ARRINGTON, Brookhaven, entered a plea for greater care in the handling of children. Education of the laity along these lines is sadly needed, most deaths among children being from preventable conditions.

DISCUSSION

DR. ROSAMOND, Memphis, Tenn.: Too much can not be said about the necessity of the baby being given its mother's milk and that mother who can nurse her baby and won't, is morally responsible for that child's life. Another subject of grave importance is the problem of the negro nurse girl. The physician can not make too great an effort to instruct the mother along this line. The nurse girl carries the little baby into all manner of filthy dens, and the mother is sitting quietly at home, either ignorant or indifferent as to where her child is being taken. It is in these places that the baby contracts all manner of contagious and infectious diseases.

DR. ROSA WISS, Meridian: The physician should impress on the mother the importance of giving the baby water. Babies do not want it at first, but they soon acquire a taste for it. The baby who is given water is usually a healthy baby.

DR. B. L. CULLEY, Jackson: If you begin right with the baby, it is not hard to keep right, and the right way to start the baby off is at its mother's breast. I do not think that a physician should be too hasty in cutting the cord, as the baby should be allowed to get a good supply of blood to start life with. Another important point is to impress on the mother the baby's need of water. So many mothers are afraid to give the baby water, and have to be told to do this from the very beginning of the child's life. It will frequently stop a colicky baby from crying when nothing else will.

DR. COOK, Hattiesburg: When the mother has a superabundance of milk, more than the child can digest, it will suffer with colic, and will vomit up the milk constantly. I think a restriction should be made as to the quantity of milk taken.

DR. ELLIS: In cases in which the mother has a superabundance of milk, but the milk is blue, I give potassium, which lessens the quantity of milk, but increases its richness.

DR. DAVIS: When the mother gives too much milk, I find that using only one breast acts admirably. Very often mothers give more milk from one breast, and in those cases I would let the mother dry the other breast.

(To be continued)

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND

One Hundred and Eleventh Annual Meeting, held in Baltimore, May 13-15, 1909

Dedication of New Building

With three days of perfect May weather the Medical and Chirurgical Faculty of Maryland held its one hundred and eleventh annual meeting and celebrated the completion and occupation of its fine new library building, May 13, 14 and 15. A picture and description of the building appear in this issue of THE JOURNAL, page 1679.

The presentation address was made by Dr. Edward N. Brush, Baltimore, chairman of the building committee. "This building belongs, it is true, to the medical profession, but solely as a means of helping the citizens of the state. Here is housed a library which is in constant demand, not alone and not by any means in its broadest intention and use, for the benefit of the medical men who resort to it, but for your benefit, men and women of Maryland, and for the benefit of your families."

Felicitating addresses were also made by Dr. Abraham Jacobi, representing the New York Academy of Medicine; Dr. James Tyson, representing the College of Physicians of Philadelphia, and Dr. John W. Farlow, of the Boston Medical Library Association.

The acceptance of the building in behalf of the society was by the president, Dr. Brice W. Goldsborough, who said: "We have looked forward to this day for many months with happy anticipations, and we are not disappointed. The erection of this building has been the inspiration of our lives. It will promote harmony. It will elevate the profession out of selfishness. It will aid in the development of our fellowmen. It will establish good-fellowship. I voice the unanimous sentiment of the society when I testify to the untiring zeal, energy and devotion of the building committee." Dr. Goldsborough gave an interesting summary of the past history of the society and particularly of its recent work and made a number of suggestions for increasing its efficiency.

Legacies and Gifts

Dr. Edward N. Brush, Baltimore, chairman of the building committee, announced that $20,000 had been left to the faculty by the will of a member whose name he was not permitted to give. Dr. William Osler, Oxford, Eng., announced a gift to the library of the first edition of Vesalius, which he purchased recently in Rome. An interesting even of the last evening of the meeting was the presentation of a portrait of Dr. William H. Stokes, formerly superintendent of Mount Hope Retreat, by Dr. Henry M. Hurd.

The Old and the New

Dr. William Osler, Oxford, Eng., delivered an address with the above title in Osler Hall. Overhanging him as he spoke was his full-length portrait in oil, the gift of his friends, and the only ornament of the room. The address will appear in full in THE JOURNAL.

Reports of Committees and Officials

The Committee on Public Instruction reported that twelve jubilee lectures had been delivered during the winter by Drs. G. M Linthicum, L. F. Barker, J. M. T. Finney, J. C. Bloodgood, W. T. Watson, Harry Friedenwald, H. O. Reik, R. T. Abercrombie, B. Holly Smith, W. P. Spratling, Misses M. E. Lent and E. N. La Motte. The lectures were delivered at the Baltimore Medical College Building, and such topics as "Hygiene of the Mouth and Eye," "Insects in Disease," "Nursing," "Physical Development," "Non-Drug Treatment," "Care of the Ear," "State Cure of Epileptics," etc., were treated. Other lectures have been given before societies, mothers' meetings, etc. In addition to this, a series of weekly articles on similar topics have appeared in the newspapers. Lectures on tuberculosis and other subjects have also been delivered in the counties. The aid of the newspapers was also sought in the effort to reach the public and weekly "Health Bulletins" were published in the Sunday papers from June 14, 1908, to the present time. These articles dealt with their subjects in a simple, popular manner and were anonymous. They were favorably received and highly appreciated by the public and also by the newspapers and have brought about kindly relations with the latter, which have not always heretofore existed. The faculty has not been called on for one cent for this work. The small amount of $15 needed being contributed by the members of the committee. The committee is proud of the fact that it instituted the first instance of such work in the country and that essentially the same plan has been adopted by the American Medical Association.

The report of the Library Committee and Librarian showed that there are now 17,533 books and 176 current journals on file. There were 4,353 readers, and 1,541 books were borrowed for home use. Portraits have been acquired of Drs. I. E. Atkinson, G. J. Preston, Russell Murdock, Moreau Forrest and a print of Rembrandt's Anatomy. Among gifts are Dr. A. D. Atkinson, 183 books; Dr. H. B. Jacobs, 77; Dr. William Osler, 22; Miss Miller, 135; Dr. Charles O'Donovan, 24; etc. Dr. Jacobs gave complete sets of the *Annales de l'Institute Pasteur*, and of the *Bulletin et Mémoire de l'Académie Impériale de Médecine*. Dr. Osler gave a first edition of Vesalius. The library will be open hereafter with a trained attendant on hand till 10 p. m.

The Committee on Sanitary and Moral Prophylaxis reported that a woman had been engaged in instructing women and children along the lines of sex hygiene. Much literature has been distributed and lectures have also been given by members of the society in the counties. Arrangements have been made to give annual lectures at the medical schools on prophylaxis of venereal disease, inculcating that the prostitute is really nothing more nor less than a focus of infection. To ascertain the sentiment regarding sexual necessity 1,014 letters were sent out to physicians and 615 replies were received. There were 484 who did not believe that health was affected by entire abstention, while 105 asserted the contrary, and 26 were non-committal; indicating that one doctor in every ten in this state is sanctioning the use of prostitutes by unmarried men, a striking result as coming from a body of scientific men and one which can not fail to increase the prevalence of venereal disease. To carry on the work $3,043.78 has been raised by dues and contributions, of which $2,803.31 has been disbursed in salaries and running expenses. The Medical Society of Social Hygiene co-operates with the committee. The committee recommends that teaching on sex hygiene be made a part of the medical course in the schools and that action be taken by the society on the question of vasectomy in criminals, insane and imbecile.

The secretary reported an unusually successful year both as to finances and organization. The county societies are in an active and healthy condition, except that of St. Mary's County. The Garrett and Allegany County societies have united, owing to the difficulty in keeping up the first named.

The trustees reported that the property of the faculty on Hamilton Terrace had been sold in fee for $9,000. The building and site cost about $90,000. The present debt is about $32,000.

The Committee on Lay Press reported that cordial relations had been established with the papers, which could not fail to benefit the profession and the public.

Reciprocity

The Board of Medical Examiners reported that Maryland is now in reciprocal relations with Maine, New Hampshire, Vermont, Virginia, West Virginia, District of Columbia, Georgia, South Carolina, Texas, Kentucky, Missouri, Kansas, Nebraska, Oklahoma, Iowa, Minnesota, Michigan, Wisconsin, Illinois, Indiana and Ohio. In a number of states the law makes no provision for recognition of licenses of other states and the Maryland law forbids recognition of licenses of such states. New Jersey has severed its reciprocal relationship on account of differences of preliminary requirements. Delaware and Ohio have also raised their requirements. Accordingly, the Medical Colleges of Baltimore have responded to the demands that those entering on the study of medicine shall be possessed of the preliminary education regarded as essential by those representing the best sentiment on this subject, and the Boards of Medical Examiners of Maryland now interpret the wording of the law, "a competent common school education," to mean "a completed high school education" and no

applicant is admitted for examination to either board who can not give proof of such requirements. The board declares in unmistakable terms its intention to follow and punish the illegal practitioner of medicine, and appended to the report are the results of thirty-two prosecutions of offenders made during the year. At present it does not seem feasible to conduct examinations in laboratories or at the bedside, and the method in vogue will probably continue.

Officers Elected

The following are the officers elected for the ensuing year: President, G. Milton Linthicum, Baltimore; vice-presidents, Drs. Philip Briscoe, Mutual, and Compton Riely and Arthur P. Herring, Baltimore; secretary, Dr. John Ruhräh, Baltimore; treasurer, Dr. William S. Gardner, Baltimore; trustee, Dr. Daniel E. Stone, Mount Pleasant; members State Board of Medical Examiners, Drs. Brice W. Goldsborough, Cambridge, and Louis B. Henkel, Jr., Annapolis; councilors, Drs. Guy Steele, Cambridge; Arthur Hawkins, Cumberland, and David Street, Baltimore; delegate to the American Medical Association, Dr. Lewellys F. Barker, Baltimore; alternate, Dr. Samuel T. Earle, Baltimore; committee on scientific work and arrangement, Drs. Joseph Chatard, Arthur M. Shipley and Isaac R. Pels, Baltimore; committee on public policy and legislation, Drs. C. Hampson Jones, and John D. Blake, Baltimore, and W. Frank Hines, Chestertown; library committee, Drs. J. Whitridge Williams, H. Barton Jacobs, Harvey W. Cushing, Gordon Wilson, and Carey B. Gamble, Baltimore; memorial committee, Drs. Joseph T. Smith, Baltimore; Walton Bolgiano and George H. Cairnes, Baltimore; William C. Stone, Ellicott City, and Thomas H. Brayshaw, Glen Burnie; committee on sanitary and moral prophylaxis, Drs. Donald R. Hooker, Lilliam Welsh, Hugh H. Young, O. Edward Janney, and Andrew H. Whitridge, Baltimore; committee on tuberculosis, Drs. Jacob H. Pleasants, John W. Chambers, Richard B. Norment, and Sylvan Rosenheim, Baltimore, and Philip L. Travers, Easton; committee on pure food law, Drs. Nathan R. Gorter, Samuel J. Fort, and Edward L. Whitney, Baltimore, and committee on funds for widows and orphans, Drs. Eugene F. Cordell, Theodore E. Cook and G. A. Christian Deetjen, Baltimore; Richard W. Trapnell, Point of Rocks, and Jacob L. Noble, Preston.

(*To be continued*)

Medical Education and State Boards of Registration

STATE BOARD STATISTICS FOR 1908

The Annual Presentation of the Results of State Board Examinations with Analyses and Deductions

On pages 1698 to 1713 will be found four tables, A, B, C and D, giving in detail the results of the various state medical license examinations held during 1908. Reports from Oklahoma were received for only one of the two examinations held; otherwise our returns are complete.

These tables have been arranged so that reading from left to right gives the results by colleges, showing how many graduates appeared for examination in each state and whether they passed or failed, as well as the total number examined during the year, the number who passed, the number who failed, the percentage of failure and the number of states in which graduates of each school appeared for examination. Reading from above downward gives the results by states, showing the number registered and rejected from each college, the total number examined, the total number registered, the total number rejected and the percentage of rejections. The fact that the majority of graduates take the license examination in the state in which the college is located is shown by the dark diagonal zone, made by the grouping of figures, passing from the left upper to the right lower corner of each table. These tables are worthy of much careful study and many important deductions are possible.

Graduates of All Years Examined in 1908

Table A shows the results for all candidates who took examinations in 1908 regardless of the years in which they graduated. This shows that altogether 7,770 were examined last year, as compared with 7,271 in 1907 and 8,035 in 1906. Of those examined, 21.7 per cent. failed, as compared with 21.3 in 1907, 20.7 per cent. in 1906 and 20.8 per cent. in 1905.

There were 137 of the medical colleges in the United States which had graduates examined. Foreign graduates were examined in 31 states, the total number being 160. The largest number examined in any state was 85, in New York, doubtless because that state has the leading port of immigration. Graduates of Canadian schools were examined in 31 states, more appearing naturally in the border line states.

Graduates of 1908 Examined During 1908

Table B gives the results for the graduates of 1908 who were examined during the year by state boards and shows that 4,388 or 56.5 per cent. of all candidates examined during the year graduated in 1908. Educational statistics show that the medical colleges of the United States graduated 4,741 students last year; therefore about 90 per cent. of all 1908 graduates took examinations for license during the year. In some of the states graduates in medicine are allowed to serve their hospital interneships without first becoming licensed practitioners, which doubtless accounts for some of the remaining 10 per cent. Of those examined 607 or 13.8 per cent. failed. An analysis of this table shows that of all the 1908 graduates examined 2,823 or 64.4 per cent. were examined in the states in which the colleges from which they graduated were located. This shows that states which sanction low grade colleges are not only responsible for the ill-prepared output of such colleges, but are themselves the recipients of the greater portion of such output.

Recent Graduates Examined During 1908

Table C gives the results for graduates of 1903 to 1908 inclusive which were examined during 1908. It includes, therefore, the figures given in Table B. This table is particularly important since it deals with recent graduates and is, therefore, the fairest basis for comparison between colleges. Any classifications of medical colleges from the standpoint of failures at state board examinations should be based on this table. Of all candidates examined in 1908, 6,477 or 83.3 per cent. were recent graduates, and of this number 17.8 per cent. failed, as compared with 21.7 per cent. for all candidates.

Old Practitioners Examined in 1908

Table D is interesting because it shows the results for candidates who graduated in 1902 or previously. The total number examined was 796 or 10.3 per cent. of all candidates examined, as compared with 675 in 1907 and 793 in 1906. This year, of those examined, 251 or 31.5 per cent. failed, as compared with 17.8 per cent. of failures for recent graduates. This total should decrease each year as advances are made in reciprocity. As a rule, the states examining the largest numbers are those which do not reciprocate with other states. A comparison with Table N will be of interest in this connection.

Undergraduates Examined During 1908

Line 141 of Table A shows the number of undergraduates examined in nine different states during 1908. Altogether 494 were examined, as compared with 674 in 1907 and 703 in 1904. The states in which undergraduates appeared, arranged in the order of the number examined, were: Mississippi, 182; Arkansas, 130; Tennessee, 100; Massachusetts, 37; Alabama, 36; Rhode Island, 6, and 1 each in Kansas, North Carolina and Virginia. Legislation requiring graduation of all applicants has since been secured in Alabama, Arkansas and Rhode Island which will greatly reduce the figures in future reports. Of the 494 undergraduates examined, 281 or 56.8 per cent. failed.

Comparison with Previous Years

A study of the totals and percentages as compared with previous years is of interest. The totals of those examined show a decrease from last year, while the percentage of failures is somewhat higher.

COMPARISON WITH PREVIOUS YEARS (TABLES A, C AND D).

Year.	Total Examined.	Examined—Passed.	Examined—Failed.	Percentage Failed.	Recent Grads. Examined.	Percentage Failed.	Older Pract. Examined.	Percentage Failed.	Non-Grads. Examined.	Percentage Failed.	Registd Without Written Examination.	Total Registered.
1904	7035	5672	1363	19.3	4773	14.1	579	29.7	515	52.6	960	6371
1905	7170	5680	1490	20.8	6054	16.2	690	37.7	472	61.9	394	6974
1906	8035	6368	1667	20.7	6580	16.4	793	27.1	703	51.3	1497	7865
1907	7271	5723	1548	21.3	5922	15.1	675	27.7	674	69.6	1426	7149
1908	7770	6084	1686	21.7	6477	17.8	705	31.5	494	56.8	1276	7360

Other deductions from the larger tables have been made and are presented in Tables E to N which are worthy of careful study.

STUDY OF COLLEGES BY STATE GROUPS

Table E is based on the first four large tables and gives data regarding the group of colleges located in each state. It shows what states are furnishing the largest numbers of physicians and the failure percentages show what kind of training these colleges are furnishing, so far as may be judged from the failures of their graduates before state boards. By comparing the

TABLE E.—COLLEGES GROUPED BY STATES
Showing Number Examined and Percentage of Failures.

All Colleges of	Graduates. Of 1908. Number Examined.	Of 1908. Per Cent. Failed.	Of 1903 to 1908. Number Examined.	Of 1903 to 1908. Per Cent. Failed.	Of 1902 and Previous. Number Examined.	Of 1902 and Previous. Per Cent. Failed.	Of all years. Number Examined.	Of all years. Per Cent. Failed.	State Rank According to Number Examined	Rank According to Success at Examinations.
Alabama	30	13.3	34	11.8	3	33.3	37	13.5	26	14
Arkansas	4	50.0	5	60.0	3	33.3	8	50.0	31	28
California	97	22.7	158	33.5	10	30.0	168	33.3	10	25
Colorado	37	13.5	58	12.0	2	0.	60	11.7	21	12
Connecticut	25	0.	49	0.	3	0.	52	0.	23	1
Dist. of Col.	70	21.4	152	25.7	5	40.0	157	26.1	11	25
Georgia	121	13.2	137	15.3	11	45.5	148	17.6	13	21
Illinois	548	9.3	751	11.1	92	28.3	843	12.9	1	13
Indiana	75	0.	81	1.2	1	100.0	82	2.4	18	2
Iowa	100	13.0	127	15.7	7	28.6	134	16.4	15	18
Kansas	41	2.4	57	10.5	5	20.0	62	11.3	20	10
Kentucky	93	33.3	127	31.5	9	66.7	136	33.8	12	26
Louisiana	115	7.0	139	10.1	16	25.0	155	11.6	12	11
Maine	28	10.7	34	8.8	2	0.	36	8.3	27	6
Maryland	285	19.3	527	24.5	40	20.0	567	24.2	5	24
Massachusetts	159	13.2	269	16.7	22	13.6	291	16.5	7	19
Michigan	113	2.7	144	4.2	29	21.0	173	8.7	9	7
Minnesota	67	19.3	114	20.2	7	14.3	121	19.8	16	22
Mississippi	14	78.6	18	77.8	..	....	18	77.8	30	33
Missouri	430	16.7	526	21.3	35	48.6	561	23.0	6	23
Nebraska	86	8.1	110	14.5	11	27.3	121	15.7	16	17
New Hampshire	6	0.	15	6.7	8	37.5	23	17.4	29	20
New York	349	1.7	536	2.1	35	20.0	571	3.2	3	3
North Carolina	73	24.7	95	30.5	..	....	95	30.5	17	24
Ohio	167	4.2	201	6.5	31	35.5	232	10.3	8	8
Oregon	23	47.6	43	56.0	1	0.	44	54.5	25	29
Pennsylvania	464	3.4	640	5.8	60	18.3	700	6.9	2	5
South Carolina	17	5.9	24	8.3	4	50.0	28	14.3	28	15
Tennessee	328	31.1	498	36.3	71	31.0	569	35.7	4	27
Texas	36	3.8	41	2.4	4	25.0	45	4.4	24	4
Vermont	52	9.4	60	13.3	6	33.3	66	15.2	19	16
Virginia	91	5.5	124	9.7	10	0.	134	9.0	15	8
Wisconsin	44	11.4	53	11.3	1	0.	54	11.1	22	9
Totals Ex'd 1908	4156	12.7	5947	16.2	544	27.9	6491	17.2	..	..

This table gives data relating to the group of colleges in each state. For example, it shows that of all the medical schools in New York 571 graduates of various years were examined by state boards during 1908, of which number 3.2 per cent. failed. Of the 536 who graduated in recent years, however (1903 to 1908 inclusive), only 2.1 per cent. failed, while of the 35 who graduated previous to 1903, 20 per cent. failed.

The fifth column gives the rank of each state group of colleges according to the number of applicants. The Illinois group of colleges leads, having 843 graduates examined by state boards during 1908, followed by Pennsylvania with 700, New York with 571, Tennessee with 569 and Maryland with 567.

The sixth column gives the rank of each state group of colleges according to the success of the graduates at state board examinations. It is interesting to compare the figures of these two last columns. While the Illinois group ranks first according to the number examined it ranks thirteenth in the success of its graduates at examinations. While Pennsylvania ranks second as to the number examined, it ranks fifth as to the success of the graduates.

percentages of the first column with the other columns it can be seen whether there has been any reduction in failures in recent years. Of the 33 states having medical colleges, 18 furnished 100 or more candidates examined. Of these 18 groups of colleges, only 4 had failure percentages of 10 per cent.; 8 had failure percentages between 10 and 20, and 6 had over 20 per cent. of failures. The highest failure percentage was obtained by the Mississippi group. Of the states having 100 or more examined, however, the highest failure percentage was obtained by the Tennessee group, which had 35.7, followed by the Kentucky group, with 33.8 per cent. Other deductions are given with the table.

STUDY OF LARGER COLLEGES

Table F is also based on the first four tables and gives the results of state board examinations as they affect the 45 largest medical colleges. Although these schools represent less than one-third of all medical colleges in the United States, they furnish 4,421 or about 60 per cent. of all the candidates for license. Of these colleges, even with the graduates of 1908, many show extremely high failure percentages. Of the 19 colleges having 100 or more examined, five stand out prominently with failure percentages of over 30 per cent.

Altogether for these schools 686 or 15.5 per cent. failed, as compared with 20.8 per cent. of failure for the 2,070 candidates from the 92 colleges having less than 50 each examined.

COMPARISON WITH PREVIOUS YEARS (FROM TABLE F).

Year.	Colleges Represented.	Colleges, 100 or More Examined. Total Examined.	Per Cent. Failed.	Colleges, 50 to 100 Examined. Total Examined.	Per Cent. Failed.	Colleges, less than 50 Examined. Total Examined.	Per Cent. Failed.	Foreign and Under-graduates Examined. Per Cent. Failed.
1904	149	6241	16.4	14	2271	11.7	28	1817	16.9	107	2153	21.0	794	43.1
1905	153	6411	18.3	14	2350	12.4	37	2543	17.7	102	1518	28.6	750	41.1
1906	146	6938	17.3	16	2504	14.5	34	2381	16.9	96	2043	21.3	1097	42.5
1907	146	6207	13.8	12	1626	12.7	36	2578	14.7	98	2003	13.6	996	55.5
1908	137	6491	17.2	19	2596	15.6	26	1825	15.5	92	2070	20.5	1277	14.6

Besides the graduates of the medical colleges of the United States, 1,279 candidates were examined, made up of foreign college graduates, graduates of miscellaneous colleges and non-graduates, of which number 44.6 per cent. failed.

RESULTS IN HOME STATES AND ELSEWHERE

Table G is of much interest because it shows what portion of the candidates from each college took their examinations in the state where the college was located and what portion went elsewhere. Of the 5,948 recent graduates examined by state boards in 1908, 3,429 or 57.6 per cent. took their license examinations in the home state. Of this number 13.2 per cent. failed, while of those who went to other states 20.8 per cent. failed. The table allows a similar comparison of percentages to be made for each college as well as for each state group of colleges, the latter being shown in heavy faced type. A further description appears with the table.

TOTAL RESULTS FOR FIVE YEARS

Table H shows, so far as reports were obtainable, the number registered and the number rejected in each state for each of the past five years. A comparison of this table with the statistics in the last educational number of THE JOURNAL (Aug. 15, 1908, p. 586), shows what would be expected, that the states having the largest number of medical graduates examine the largest number of physicians. In 1904 several states registered all or the majority of their applicants on the presentation of satisfactory credentials without written examinations. Now only one state, New Mexico, will register candidates on presentation of a diploma, without examination.

This table shows only those registered by examination. Another table (M) shows the total registration by all methods.

CLASSIFICATION OF COLLEGES

Tables I, J, K and L give a classification of the medical colleges of the United States on the basis of the failure of their graduates at state board examinations during the past year. This classification is based on the examination of *recent graduates* as shown in Table C. In forming definite conclusions, the cautions hereinafter given should be observed, of noting the number examined, the number of states in which representatives appeared and the character of the boards making the examination. To form a more exact judgment one should compare the percentage of failures received by any college this year with those received in the classifications published in previous years.

Table I gives a list of 48 colleges which obtained failure percentages below 10 per cent., 20 of which had no failures whatsoever and 31 had less than 5 per cent. The failure percentage for the entire group was 3.6. Table J shows 29 colleges whose failure percentages were between 10 and 20 per cent., of which number 18 had percentages below that for the group, which was 14.1. Table K includes 46 colleges having failure percentages of 20 per cent. and above, of which number 32 had above 30 per cent., 20 had above 40 per cent. and 10 had percentages of 50 per cent. or above. The highest percentages of failures were 77.8, 75.0 and 66.7, three schools receiving the last given. The percentage for all candidates from this group of colleges was 35.8. In Table L have been placed a number of colleges in regard to which data was insufficient to allow of fair comparison. This list contains 14 colleges, to which should be added the Epworth College of Medicine of Oklahoma, for which no examinations were reported.

COMPARISON WITH PREVIOUS YEARS

	Less than 10 Per cent.	10 to 20 Per cent.	Above 20 Per cent.	Unclassified.	Total.
1904	47	27	38	37	149
1905	45	22	40	46	153
1906	62	24	43	20	149
1907	64	27	39	18	148
1908	48	29	46	15	138

A comparison of the classification this year with those of previous years shows a decrease in the number of colleges having less than 10 per cent. of failures and an increase in those having above 20 per cent.

TABLE F.—COLLEGES HAVING 50 OR MORE EXAMINED

TABLE SHOWS TOTAL NUMBER EXAMINED, PERCENTAGE OF FAILURES AND NUMBER OF STATES IN WHICH EACH COLLEGE HAD REPRESENTATIVES

Name of College.	Graduates, All Years.			Graduates of 1903-1908.			Graduates, 1902 and previous.			Graduates of 1908.			Marginal Number.
	No. Examined.	Per Cent. Failed.	No. States.	No. Examined.	Per Cent. Failed.	No. States.	No. Examined.	Per Cent. Failed.	No. States.	No. Examined.	Per Cent. Failed.	No. States.	
Jefferson Medical College	332	8.6	33	209	6.2	32	23	30.4	14	141	5.7	24	110
College of Physicians and Surgeons, Chicago	199	12.6	25	179	10.1	21	20	35.0	12	126	8.7	12	28
University of Pennsylvania, Department of Medicine	196	1.0	27	176	0.6	23	20	0.	11	130	0.	14	113
Baltimore Medical College	171	34.5	21	161	34.8	21	10	30.0	8	81	23.4	14	52
Northwestern University Medical School	167	3.0	21	161	3.1	20	6	0.	5	128	3.1	15	34
Tulane University of Louisiana, Medical Department	135	6.7	13	122	5.7	11	13	15.4	7	103	3.9	8	49
Rush Medical College	130	6.9	24	91	1.1	17	39	20.6	10	57	1.8	5	95
Meharry Medical College	129	50.5	19	125	50.4	17	4	50.0	3	84	44.0	15	121
University of Louisville, Medical Department	128	32.0	28	119	29.4	26	9	66.7	8	88	31.8	19	47
University of Maryland, School of Medicine	124	17.7	23	111	19.8	20	13	0.	11	64	14.1	11	56
Columbia University, College of Physicians and Surgeons	124	4.8	19	110	2.7	14	14	21.4	10	49	4.1	3	86
Tufts College Medical School	115	13.0	16	110	12.7	13	5	20.0	4	72	11.1	6	61
University of Michigan, College of Medicine	112	8.0	21	94	2.1	16	18	38.9	10	73	1.4	10	64
Memphis Hospital Medical College	111	25.1	9	94	26.2	9	17	29.4	7	76	25.5	7	120
Washington University, Medical Department, St. Louis	107	12.1	10	105	12.4	9	2	0.	2	88	11.4	3	79
College of Physicians and Surgeons, Baltimore	107	11.3	26	93	8.6	19	14	28.6	11	57	7.0	10	53
Long Island College Hospital	105	7.6	8	102	5.9	7	3	66.7	3	58	3.4	3	89
Barnes Medical College, St. Louis	104	30.8	22	95	28.4	20	9	55.6	8	65	16.9	11	71
St. Louis University, School of Medicine	100	13.0	11	100	13.0	11	.....	.....	.....	87	9.2	8	75
Harvard Medical School	98	8.2	19	85	9.4	15	13	0.	9	41	0.	8	60
Medico-Chirurgical College, Philadelphia	95	7.4	14	91	6.6	14	4	25.0	3	62	1.4	6	111
Chicago College of Medicine and Surgery	94	8.5	16	94	8.5	16	.....	.....	.....	86	7.0	11	26
University and Bellevue Hospital Medical College	94	2.1	8	91	2.2	7	3	0.	3	69	2.9	5	93
University of Nashville, Medical Department	90	18.9	18	81	18.5	17	9	22.2	4	53	19.0	14	123
University Medical College, Kansas City	82	14.6	11	75	13.3	8	7	28.6	6	66	12.1	6	78
George Washington University, Department of Medicine	76	30.3	16	76	30.3	16	.....	.....	.....	54	26.5	9	17
Indiana University School of Medicine	76	0.	3	76	0.	3	.....	.....	.....	71	0.	2	36
Western Pennsylvania Medical College, Pittsburg	76	19.7	7	74	20.3	6	2	0.	2	59	10.2	4	114
Johns Hopkins Medical School	73	2.7	22	72	2.8	22	1	0.	1	33	3.0	12	54
St. Louis College of Physicians and Surgeons	73	47.9	18	64	43.7	15	9	77.8	7	51	41.2	9	76
State University of Iowa, College of Medicine	70	15.7	8	65	13.8	6	5	40.0	4	50	12.0	2	40
Cornell University Medical College	69	0.	8	68	0.	8	1	0.	1	45	0.	2	87
University of Minnesota, College of Med. and Surg.	68	11.8	11	64	12.5	10	4	0.	4	32	9.4	6	66
Leonard School of Medicine	67	34.3	12	67	34.3	12	.....	.....	.....	52	28.9	10	95
Hahnemann Medical College, Chicago	66	21.2	19	57	21.1	14	9	22.2	9	43	18.6	8	29
University of Vermont, College of Medicine	66	15.2	12	60	13.3	11	6	33.3	4	32	9.4	4	132
Creighton Medical College	64	23.4	13	61	19.7	11	3	100.0	2	45	13.3	7	80
Maryland Medical College	60	50.0	19	58	50.0	18	2	50.0	2	19	52.6	10	55
Atlanta School of Medicine	58	20.7	7	57	19.3	7	1	100.0	1	53	17.0	7	21
University of Tennessee, Department of Medicine	54	38.9	16	39	35.9	11	15	46.7	9	26	23.1	8	124
Yale Medical School, New Haven	52	0.	10	49	0.	10	3	0.	2	25	0.	5	16
University College of Medicine, Richmond	52	5.8	9	48	6.3	9	4	0.	3	43	2.3	6	135
University of Buffalo, Medical Department	51	0.	5	47	0.	2	4	0.	4	31	0.	1	94
Medical College of Virginia, Richmond	51	9.8	6	50	10.0	6	1	0.	1	42	4.8	3	133
Albany Medical College	50	2.0	5	45	0.	4	5	20.0	5	33	0.	1	85
Totals	4421	13[illegible]	.....	4072	14.5	.....	350	26.9	.....	2830	11.6	.....	.....

This table is especially interesting, since it gives data relating to the 45 larger medical colleges arranged according to the number of graduates examined. This allows of comparisons between colleges having classes of nearly equal size.

Of the 19 colleges having 100 or more examined, only 8 have failure percentages of 8.6 or less, while 5 stand out prominently with large failure percentages of 30.8, 32.0, 34.5, 35.1 and 50.5. This marked difference holds even in respect to recent graduates (of 1903 to 1908, inclusive).

Of the 26 colleges having between 50 and 100 graduates examined, 12 had failure percentages less than 10; 6 had failure percentages between 10 and 20, and 8 had failure percentages above 20, the 3 highest having 38.9, 47.9 and 50 per cent.

The average percentages of failures for these larger colleges, for graduates of 1902 and previous years, was 26.9; for graduates of 1903 to 1908, inclusive (recent graduates), 14.5; for graduates of 1908, 11.6, and for graduates of all years, 15.5. Of the 45 colleges, 28 obtained failure percentages below the average. Of the 6,491 college graduates examined by state boards in 1908, these larger schools furnished 4,421, or 68.1 per cent.

TABLE G—COMPARISON OF RESULTS IN HOME STATES AND ELSEWHERE. BASED ON TABLE C.

College.	Total Examined.	Results in Home State. Passed.	Failed.	Per Cent. Failed.	Results in Other States. Passed.	Failed.	Per Cent. Failed.
ALABAMA ..... —14.8	34	23	4	14.8	7	0	0.
Birmingham Medical College..	14	10	0	0.	4	0	0.
University of Alabama	20	13	4	23.5	3	0	0.
ARKANSAS ..... +75.0	5	1	0	0.	1	3	75.0
Coll. of Phys. and Surg.....	1	1	0	0.	..	..	....
University of Arkansas.....	4	..	..	....	1	3	75.0
CALIFORNIA ..... —16.7	158	81	47	36.7	24	6	20.0
California Eclect. Med. Coll..	5	0	3	100.0	2	0	0.
Coll. of P. and S., Los Angeles.	14	6	5	45.5	2	1	33.3
Coll. of P. and S., San Fran..	34	7	14	66.7	9	4	30.8
Cooper Medical College.....	33	27	5	15.6	1	0	0.
Hahnemann Medical College..	7	3	3	50.0	1	0	0.
Oakland Coll. of M. and S....	2	1	0	0.	1	0	0.
University of California	22	15	3	16.7	3	1	25.0
Univ. of Southern California.	41	22	14	38.8	5	0	0.
COLORADO 9.4	58	34	6	15.0	17	1	5.6
Denver & Gross Coll. of Med.	40	21	4	16.0	14	1	6.7
Denver Coll. of P. and S.....	5	3	2	40.0	..	..	....
University of Colorado.....	13	10	0	0.	3	0	0.
CONNECTICUT	49	21	0	0.	28	0	0.
Yale Medical School.....	49	21	0	0.	28	0	0.
DIST. OF COLUMBIA..... —13.5	152	39	20	33.9	74	19	20.4
George Washington Univ....	76	26	13	33.3	27	10	27.0
Georgetown University	30	7	1	12.5	19	3	13.6
Howard University	46	6	6	50.0	28	6	17.6
GEORGIA ..... —22.6	137	90	5	5.3	26	16	38.1
Atlanta School of Medicine..	57	36	4	10.0	10	7	41.2
Atlanta College of P. and S..	34	24	0	0.	9	1	10.0
Georgia Eclectic Med. Coll...	1	..	..	....	1	0	0.
Med. Coll. of Georgia.....	45	30	1	3.2	6	8	57.1
ILLINOIS ..... + 4.0	752	448	78	9.7	221	35	13.7
American Medical Miss. Coll.	26	7	0	0.	16	3	15.8
Bennett Medical College.....	35	21	4	16.0	8	2	20.0
Chicago Coll. of M. and S....	94	66	3	4.3	20	5	20.0
Coll. of Med. and Surg. Ph.M.	4	2	2	50.0	..	..	....
Coll. of P. and S., Chicago....	179	101	10	9.0	60	8	11.8
Hahnemann Med. C., Chicago	57	27	6	18.2	18	6	25.0
Hering Medical College.....	18	12	1	7.7	5	0	0.
Illinois Medical College.....	33	16	6	27.3	9	2	18.1
Jenner Medical College.....	38	25	11	30.6	1	1	50.0
National Med. University.....	16	4	4	50.0	5	3	37.5
Northwestern University.....	161	110	1	0.9	46	4	8.0
Rush Medical College.....	91	57	0	0.	33	1	2.9
INDIANA ..... +33.3	81	78	0	0.	2	1	33.3
Indiana University	76	74	0	0.	2	0	0.
Physio-Med. of Indiana.....	5	4	0	0.	0	1	100.0
IOWA ..... + 6.4	127	84	14	14.3	23	6	20.7
Drake University	32	24	5	17.2	2	1	33.3
Sioux City Coll. of Medicine..	20	9	1	10.0	7	3	30.0
University of Iowa (H).....	10	8	1	11.1	1	0	0.
University of Iowa (R).....	65	43	7	14.0	13	2	13.3
KANSAS ..... — 1.6	57	32	4	11.1	19	2	9.5
Kansas Medical College.....	17	8	3	27.3	4	2	33.3
University of Kansas.....	26	14	0	0.	12	0	0.
Western Eclect. C. of M. & S.	14	10	1	9.1	3	0	0.
KENTUCKY ..... —28.9	127	28	26	48.1	59	14	19.2
Louisville National Med. Coll.	6	0	3	100.0	2	1	33.3
Southern Homeo. Med. Coll...	2	..	..	....	1	1	50.0
University of Louisville	119	28	23	45.1	56	12	17.6
LOUISIANA ..... —17.0	139	88	4	4.3	37	10	21.3
Flint Medical College.....	17	8	3	27.3	2	4	66.7
Tulane University	122	80	1	1.2	35	6	14.6
MAINE ..... + 1.7	34	22	2	8.3	9	1	10.0
Medical School of Maine	34	22	2	8.3	9	1	10.0
MARYLAND 15.2	527	98	60	38.0	300	69	22.8
Atlantic Medical College.....	23	13	9	42.9	1	0	0.
Baltimore Medical College....	161	19	16	45.7	86	40	31.7
Coll. of P. and S., Baltimore.	93	11	6	35.3	74	2	2.6
Johns Hopkins Med. School..	72	16	0	0.	54	2	3.6
Maryland Medical College....	58	4	11	73.3	25	18	42.0
University of Maryland.....	111	32	15	31.9	57	7	10.9
Woman's Medical College....	9	3	3	50.0	3	0	0.
MASSACHUSETTS ..... + 5.9	289	128	21	14.1	96	24	20.0
Boston University	31	17	4	19.0	10	0	0.
College of P. and S., Boston.	43	10	10	50.0	14	9	39.1
Harvard University.....	85	46	0	0.	31	8	20.6
Tufts Medical College.....	110	55	7	11.3	41	7	14.6
MICHIGAN 5.3	144	89	2	2.2	49	4	7.5
Detroit College of Medicine....	35	27	2	6.9	4	2	33.3
Detroit Homeopathic College..	6	4	0	0.	2	0	0.
University of Michigan (R)....	94	53	0	0.	39	2	4.9
University of Michigan (H)....	9	5	0	0.	4	0	0.
MINNESOTA ..... — 3.9	114	54	15	21.7	37	8	17.8
Hamline University.....	46	21	9	30.0	11	5	31.3
University of Minnesota (R)..	64	30	5	14.3	26	3	10.3
University of Minnesota (H)..	4	3	1	25.0	..	..	....
MISSISSIPPI ..... +28.6	18	4	10	71.4	0	4	100.0
Mississippi Medical College....	18	4	10	71.4	0	4	100.0
MISSOURI 1.1	526	138	39	22.0	276	73	20.9
American Medical College.....	10	6	2	25.0	2	0	0.
Barnes Medical College.....	95	2	3	60.0	66	24	26.7
Ensworth Central Med. Coll..	33	7	3	30.0	16	7	30.4
Homeo. College of Missouri...	16	4	3	42.9	5	4	44.4
Kansas City Hahn. Med. Coll..	15	4	2	33.3	9	0	0.
St. Louis College of P. and S..	64	8	7	46.7	28	21	42.9
St. Louis University.....	100	31	7	18.4	56	6	9.7
University of Missouri.....	13	10	0	0.	3	0	0.
Univ. Med. Coll., Kansas City	75	24	7	22.6	41	3	6.8
Washington University.....	105	42	5	10.6	49	9	13.8
NEBRASKA ..... —14.8	110	74	9	11.1	20	7	25.9
Creighton Medical College.....	61	34	6	15.0	15	6	28.6
Lincoln Medical College.....	19	13	1	7.2	4	1	20.0
Nebraska College of Medicine..	4	2	2	50.0	..	..	....
University of Nebraska.....	26	25	0	0.	1	0	0.
NEW HAMPSHIRE 20.0	15	4	1	20.0	10	0	0.
Dartmouth Medical College....	15	4	1	20.0	10	0	0.
NEW YORK ..... —15.6	536	467	9	18.9	58	2	3.3
Albany Medical College.....	45	42	0	0.	3	0	0.
Columbia Univ. Coll. P. & S..	119	88	3	3.3	19	0	0.
Cornell University.....	68	61	0	0.	7	0	0.
Eclectic Med. Coll., New York.	7	7	0	0.	..	..	....
Long Island College Hospital..	102	86	4	4.4	10	2	16.7
New York Homeo. Med. Coll..	23	21	0	0.	2	0	0.
New York Woman's Med. Coll..	3	3	0	0.	..	..	....
Syracuse University.....	40	38	0	0.	2	0	0.
University and Bellevue M. C.	91	75	2	2.5	14	0	0.
University of Buffalo.....	47	46	0	0.	1	0	0.
NORTH CAROLINA ..... —19.4	95	33	8	19.5	33	21	38.9
Leonard Medical College.....	67	15	3	16.7	29	20	40.8
North Carolina Med. College..	13	5	4	44.4	3	1	25.0
University of North Carolina..	15	13	1	7.2	1	0	0.
OHIO ..... —10.4	201	130	4	3.0	58	9	13.4
Cleveland Coll. of P. and S....	23	18	0	0.	5	0	0.
Cleveland Homeo. Med. Coll...	13	7	0	0.	5	1	16.7
Eclectic Medical Institute.....	30	6	3	33.3	18	3	14.3
Medical College of Ohio.....	35	23	0	0.	11	1	8.3
Miami Medical College.....	27	14	1	6.7	9	3	25.0
Pulte Medical College.....	1	..	..	....	1	0	0.
Starling-Ohio Medical College.	34	30	0	0.	3	1	25.0
Toledo Medical College.....	4	3	0	0.	1	0	0.
Western Reserve University....	34	29	0	0.	5	0	0.
OREGON ..... —65.3	43	6	22	78.6	13	2	13.3
University of Oregon.....	23	5	11	31.3	7	0	0.
Willamette University.....	20	1	11	91.7	6	2	25.0
PENNSYLVANIA 1.0	640	382	19	5.0	241	18	6.8
Hahn. M. C. of Philadelphia..	36	22	1	4.4	13	0	0.
Jefferson Medical College.....	209	56	1	1.0	100	12	10.7
Medico-Chirurgical Coll., Pa..	91	63	2	3.1	22	4	15.4
Temple College.....	9	8	1	11.1	..	..	....
University of Pennsylvania....	176	104	0	0.	71	1	1.4
Western Pennsylvania M. C....	74	53	5	20.9	6	1	14.3
Woman's M. C., Pennsylvania	45	16	0	0.	29	0	0.
SOUTH CAROLINA ..... —10.5	24	17	2	10.5	5	0	0.
Med. Coll. of South Carolina	24	17	2	10.5	5	0	0.
TENNESSEE ..... —20.5	498	117	33	22.0	200	148	42.5
Chattanooga Medical College..	38	10	9	47.4	10	9	47.4
College of P. & S., Memphis..	13	6	0	0.	5	2	28.6
Knoxville Medical College....	6	2	2	50.0	0	2	100.0
Memphis Hosp. Med. Coll....	94	13	2	13.3	47	32	40.5
Meharry Medical College.....	125	28	9	24.3	34	54	61.4
Tennessee Medical College....	23	11	3	21.4	6	3	33.3
University of Nashville.....	81	19	0	0.	47	15	24.2
University of Tennessee.....	39	14	5	26.3	11	9	45.0
University of South.....	41	1	1	50.0	21	18	46.2
University of West Tennessee..	3	2	1	40.0	1	2	66.7
Vanderbilt University.....	30	10	0	0.	18	2	10.0
TEXAS 2.6	41	37	1	2.6	3	0	0.
Baylor University.....	8	8	0	0.	..	..	....
Fort Worth University.....	3	3	0	0.	..	..	....
Southwestern University.....	6	5	1	16.7	..	..	....
University of Texas.....	24	21	0	0.	3	0	0.
VERMONT ..... +21.9	60	31	1	3.1	21	7	25.0
University of Vermont.....	60	31	1	3.1	21	7	25.0
VIRGINIA 0.5	124	78	8	9.5	36	4	10.0
Medical College of Virginia...	50	36	4	10.0	9	1	10.0
Univ. College of Medicine.....	48	32	0	0.	13	3	20.9
University of Virginia.....	26	8	4	33.3	14	0	0.
WISCONSIN ..... — 6.1	53	42	5	10.6	5	1	16.7
Marquette Univ., Med. Dept.	42	33	5	13.2	4	0	0.
Wisconsin Coll. of P. and S..	11	9	0	0.	1	1	50.0
Totals ..... + 7.1	5948	2976	453	13.2	2008	511	20.3

In this table the number of graduates examined in the state in which the college is located are grouped in one column, while graduates of that college examined in other states are in another column. This shows frequently that the graduates of certain schools have a better chance of passing the examination in the state in which they are located than they have elsewhere. This should always be considered in making comparisons between colleges. A college having an exceedingly low standard, by having all its graduates examined in the home state, may thus show a lower percentage of failures than a college of much higher grade which has graduates examined by several states.

The heavy-faced figures give the results by states. The first column of heavy-faced figures shows the difference between the percentages of home colleges and of colleges of other states. The plus sign indicates that colleges of other states have the larger percentage of rejections; the minus sign indicates that the home colleges have had the greater percentage rejected.

TOTAL REGISTRATION IN 1907

The tables thus far described have referred to candidates registered by examination only. Table M, however, shows the total number registered in each state, including those registered by examination, by reciprocity and under various exemption clauses. Above 100 were registered in 29 different states, above 200 in 9 and above 400 in three, the largest numbers being registered in New York with 751, in Illinois with 691 and in Pennsylvania with 485. Nongraduates were registered in seven different states, the largest numbers being 73 in Mississippi, 67 in Arkansas and 55 in Tennessee.

Table N gives those registered without examination on presentation of satisfactory credentials which included a license issued by some other state. This is usually described by the term "reciprocity," which conveys the idea that the state which accepts the license of another must be granted the same courtesy by the state issuing the original license. The term does not well describe this method of registration, however, since several states consider it more fair to the individual to accept his credentials, if satisfactory, whether the state issuing the original license returns the favor or not. A further description appears beneath the table. Without the provision for reciprocity 1,092 physicians would have been compelled to undergo a second trying examination.

TABLE H.—PHYSICIANS EXAMINED BY STATE BOARDS, 1904 TO 1908, INCLUSIVE

State.	1904		1905		1906		1907		1908		Total Examined.	Registered.	Rejected.	Percentage Rejected.
	Registered.	Rejected.	Registered.	Rejected.	Registered.	Rejected.	Registered.	Rejected.	Registered.	Rejected.				
Alabama*	118	20	131	22	138	22	142	38	66	66	763	595	168	22.0
Arizona	28	7	35	7	35	4	29	3	36	...	187	163	24	12.8
Arkansas*	113	37	88	58	152	73	72	106	120	85	906	547	359	39.6
California	216	80	144	127	190	44	118	84	145	96	1,244	813	431	34.6
Colorado	3	10	283	54	...	...	50	6	52	14	472	388	84	17.8
Connecticut	67	26	66	17	84	28	64	17	67	16	452	348	104	23.0
Delaware	10	1	20	17	11	4	2	11	0	4	80	63	17	21.3
Dist. of. Col.	78	14	67	23	63	34	59	37	53	36	464	320	144	31.0
Florida	...	...	24	3	66	7	72	8	79	10	269	241	28	10.4
Georgia	110	4	...	...	164	5	139	22	150	14	608	565	45	7.4
Idaho	23	10	46	15	42	12	38	7	52	16	267	201	66	24.7
Illinois	728	34	750	36	748	64	760	52	646	96	3,748	3,461	287	7.6
Indiana	150	24	249	63	228	12	173	17	172	7	1,094	971	123	11.2
Iowa	238	52	205	30	166	29	146	26	139	43	1,074	894	180	16.8
Kansas	64	13	163	29	180	27	125	14	116	18	749	648	101	13.5
Kentucky	4	6	38	4	52	13	48	19	107	61	352	249	103	29.3
Louisiana	120	20	105	15	133	14	153	7	145	29	741	656	85	11.5
Maine	66	8	68	3	80	8	74	4	92	11	414	380	34	8.2
Maryland	121	66	120	75	112	44	139	41	132	71	921	624	297	32.2
Massachusetts*	320	77	274	63	270	120	226	118	238	108	1,814	1,328	486	26.8
Michigan	56	1	82	5	102	6	150	8	113	6	585	559	26	4.4
Minnesota	134	27	124	39	104	31	89	35	76	25	675	518	157	23.3
Mississippi*	119	130	113	138	156	144	157	191	128	184	1,470	683	787	53.5
Missouri	...	...	...	...	249	193	186	89	181	58	945	616	329	34.8
Montana	31	10	31	17	24	25	34	14	51	27	264	161	103	39.0
Nebraska	93	7	87	29	58	25	68	14	103	16	500	409	91	18.2
Nevada	2	0	...	...	2	0	10	1	17	0	32	31	1	3.1
New Hamp.	33	8	15	5	34	17	19	11	37	16	196	138	58	29.6
New Jersey	76	20	55	17	80	13	73	15	89	17	455	373	82	18.0
New Mexico	...	...	...	...	...	...	5	3	30	7	44	37	7	15.7
New York	367	63	705	51	829	56	691	54	679	73	3,667	3,371	296	8.1
North Carolina	74	19	92	40	87	41	111	20	95	26	605	459	146	24.1
North Dakota	54	13	72	7	60	10	49	4	52	10	331	287	44	13.3
Ohio	226	13	213	8	222	16	179	10	183	9	1,084	1,032	52	4.8
Oklahoma	30	36	53	28	95	28	...	...	34	10	314	212	102	32.5
Oregon	70	6	68	66	65	56	62	56	43	63	555	308	247	42.7
Pennsylvania	460	121	540	98	519	73	465	54	485	49	2,864	2,469	395	13.8
Rhode Island*	52	5	47	19	54	30	36	33	29	17	312	218	94	30.1
South Carolina	73	6	44	25	39	13	41	17	47	21	299	229	70	23.4
South Dakota	36	12	41	11	26	11	23	5	58	6	229	184	45	19.7
Tennessee*	166	107	86	35	150	96	133	140	213	87	1,213	748	465	38.3
Texas	96	87	117	73	159	54	187	64	143	23	1,002	702	300	29.9
Utah	31	7	32	8	37	7	28	6	37	5	180	153	27	15.0
Vermont	54	1	43	1	35	0	40	7	45	6	232	217	15	6.5
Virginia	121	54	140	50	123	35	124	33	128	53	861	636	225	25.0
Washington	135	46	141	34	137	45	163	38	182	60	981	758	223	22.7
West Virginia	63	40	109	95	84	72	92	9	102	18	784	550	234	29.9
Wisconsin	60	7	95	5	57	2	62	5	80	7	375	349	26	6.9
Wyoming	...	...	12	1	18	3	7	5	7	2	49	38	11	22.4
Totals	7,095	1,276	7,506	1,576	8,095	1,771	7,271	1,770	7,770	1,747	37,707	...	...	...
Registered	5,672		6,042		6,368		5,723		6,084		...	29,889	...	...
Rejected	1,363		1,554		1,667		1,548		1,686		...	...	7,818	...
Percent. Rej	19.4		20.5		20.7		21.3		21.7		...	...	...	20.7

This table gives the number of candidates registered by examination by each state during each of the last five years, as well as the number rejected. The last four columns give the totals for the five years and the percentage rejected by each state.

Five states registered over 1,000 candidates by examination, these being Illinois, Massachusetts, New York, Ohio and Pennsylvania. Over 2,000 were registered in Illinois and New York.

The highest percentage of rejections was 53.5 in Mississippi, followed by Oregon, Arkansas and Tennessee, with 42.7, 39.6 and 38.3, respectively. The states marked with an asterisk (*) included non-graduates among those examined, and for that reason would be expected to have higher percentages rejected.

The lowest failure percentages were in Nevada, 3.1; Michigan, 4.4; Ohio, 4.8; Vermont, 6.5 and Wisconsin, 6.9.

CAUTIONS IN FORMING CONCLUSIONS

In making comparisons on the basis of these statistics several factors should be carefully considered. The number examined is important since, if all other conditions are equal, the largest number of graduates examined gives the more accurate finding. But other conditions are seldom equal. The number

TABLE I.—COLLEGES HAVING LESS THAN 10 PER CENT. OF FAILURES BEFORE STATE BOARDS IN 1908. BASED ON TABLE C.

College.	Total Examined.	Number Passed.	Number Failed.	Per Cent. Failed.	No. of States.
ALABAMA					
Birmingham Medical College	14	14	0	0.	5
CALIFORNIA					
Oakland College of Med. and Surgery	2	2	0	0.	2
COLORADO					
University of Colorado, Medical Dept.	13	13	0	0.	4
CONNECTICUT					
Yale Medical School, New Haven	49	49	0	0.	10
GEORGIA					
Atlanta College of Phys. and Surgs.	34	33	1	2.9	7
ILLINOIS					
Chicago College of Med. and Surg.	94	86	8	8.5	16
Hering Medical College	18	17	1	5.6	5
Northwestern University Med. School	191	186	5	3.1	20
Rush Medical College	91	90	1	1.1	17
INDIANA					
Indiana University School of Medicine	76	76	0	0.	3
KANSAS					
University of Kansas, School of Med.	26	26	0	0.	4
Western Eclectic Coll. Med. and Surg.	14	13	1	7.2	3
LOUISIANA					
Tulane University of La., Med. Dept.	122	115	7	5.7	11
MAINE					
Medical School of Maine	34	31	3	8.8	4
MARYLAND					
Coll. of Phys. and Surgs., Baltimore	93	85	8	8.6	19
Johns Hopkins Medical School	72	70	2	2.8	22
MASSACHUSETTS					
Harvard Medical School	85	77	8	9.4	15
MICHIGAN					
Detroit Homeopathic College	6	6	0	0.	2
Univ. of Mich., Dept. of Med. and Surg.	94	92	2	2.1	16
Univ. of Michigan, Homeopathic Dept.	9	9	0	0.	4
MISSOURI					
University of Missouri, Medical Dept.	13	13	0	0.	4
NEBRASKA					
Univ. of Nebraska, Coll. of Medicine	26	26	0	0.	2
NEW HAMPSHIRE					
Dartmouth Medical School	15	14	1	6.7	5
NEW YORK					
Albany Medical College	45	45	0	0.	4
Columbia Univ., Coll. P. and S., N. Y.	110	107	3	2.7	14
Cornell University Medical College	68	68	0	0.	8
Long Island College Hospital	102	96	6	5.9	7
New York Homeopathic College	23	23	0	0.	3
Syracuse Univ. Coll. of Medicine	40	40	0	0.	3
Univ. and Bellevue Hosp. Med. Coll.	91	89	2	2.2	7
University of Buffalo Med. Dept.	47	47	0	0.	2
NORTH CAROLINA					
Univ. of North Carolina, Med. Dept.	15	14	1	6.7	2
OHIO					
Cleveland Coll. of Phys. and Surgs.	23	23	0	0.	6
Cleveland Homeopathic Med. College	13	12	1	7.7	3
Medical College of Ohio	35	34	1	2.9	7
Starling-Ohio Medical College	34	33	1	2.9	5
Toledo Medical College	4	4	0	0.	2
Western Reserve Univ., Med. Dept.	34	34	0	0.	5
PENNSYLVANIA					
Hahnemann Med. Coll., Philadelphia	36	35	1	2.8	10
Jefferson Medical College	209	196	13	6.2	32
Medico-Chirurgical Coll., Philadelphia	91	85	6	6.6	14
University of Pennsylvania, Med. Dept.	176	175	1	0.6	23
Woman's Med. Coll. of Pennsylvania	45	45	0	0.	13
SOUTH CAROLINA					
Medical College of South Carolina	24	22	2	8.3	3
TENNESSEE					
Vanderbilt University Med. Dept.	30	28	2	6.7	9
TEXAS					
University of Texas, Dept. of Med.	24	24	0	0.	4
VIRGINIA					
University College of Medicine	48	45	3	6.3	9
WISCONSIN					
Wisconsin Coll. of Phys. and Surgs.	11	10	1	9.1	3
Totals	2539	2447	92	3.6	

of different states in which a school's graduates have been examined is important. The larger this number the more accurate will be the conclusions. Again, the character of the boards making the examination and the methods employed by them are important factors to be considered, since some boards mark severely while others, which is especially true of partisan boards, may be very lenient. Finally in this connection it should be stated that the character of the license examination as usually conducted at the present time is such that graduates of colleges operated largely on quiz-class methods may be most successful in passing them. Therefore, the statistics herewith presented should be taken only as part of any investigation of medical schools, although it is an important part.

TABLE J.—COLLEGES HAVING BETWEEN 10 AND 20 PER CENT. OF FAILURES BEFORE STATE BOARDS IN 1908. BASED ON TABLE C.

College.	Total Examined.	Number Passed.	Number Failed.	Per Cent. Failed.	No. of States.
CALIFORNIA					
Cooper Medical College	33	28	5	15.2	2
University of California, Med. Dept.	22	18	4	18.2	5
COLORADO					
Denver and Gross College of Medicine	40	35	5	12.5	14
DISTRICT OF COLUMBIA					
Georgetown Univ., School of Med.	30	26	4	13.3	13
GEORGIA					
Atlanta School of Medicine	57	46	11	19.3	7
ILLINOIS					
American Medical Missionary Coll.	26	23	3	11.5	11
Bennett Coll. of Eclec. Med. and Surg.	35	29	6	17.1	8
College of Physicians and Surgeons	179	161	18	10.1	21
IOWA					
Drake Univ., Col. of Med. and Surg.	32	26	6	18.7	4
State Univ. of Iowa., Coll. of Med.	65	56	9	13.8	6
State Univ. of Iowa, Homeo. Dept.	10	9	1	10.0	2
MARYLAND					
Univ. of Maryland, School of Medicine	111	89	22	19.8	20
MASSACHUSETTS					
Boston University School of Medicine	31	27	4	12.9	6
Tufts College Medical School	110	96	14	12.7	13
MICHIGAN					
Detroit College of Medicine	35	31	4	11.4	5
MINNESOTA					
Univ. of Minn., Coll. of Med. and Surg.	64	56	8	12.5	10
MISSOURI					
Kansas City Hahnemann Medical Coll.	15	13	2	13.3	5
St. Louis University School of Med.	100	87	13	13.0	11
University Med. College, Kansas City	75	65	10	13.3	8
Washington University Medical Dept.	105	92	13	12.4	9
NEBRASKA					
Creighton Medical College	61	49	12	19.7	11
Lincoln Medical College	19	17	2	10.5	4
OHIO					
Miami Medical College	27	23	4	14.8	8
TENNESSEE					
College of Phys. and Surgs., Memphis	11	11	2	15.4	3
University of Nashville, Medical Dept.	81	66	15	18.5	17
VERMONT					
University of Vermont, College of Med.	60	52	8	13.3	11
VIRGINIA					
Medical College of Virginia	50	45	5	10.0	6
University of Virginia, Dept. of Med.	26	22	4	15.4	14
WISCONSIN					
Marquette University, Medical Dept.	42	37	5	11.9	5
Totals	1552	1335	219	14.1	..

TABLE L.—UNCLASSIFIED COLLEGES

College.	Total Examined.	Number Passed.	Number Failed.	Per Cent. Failed.	No. of States.
ARKANSAS					
Coll. of Phys. and Surgs., Little Rock	1	1	0	0.	1
COLORADO					
Denver College of Phys. and Surgs.	5	3	2	40.0	1
GEORGIA					
Georgia Coll. of Eclectic Med. and Surg.	1	1	0	0.	1
ILLINOIS					
Coll. Med. and Surg., Physio-Medical	4	2	2	50.0	1
KENTUCKY					
Southwestern Homeopathic Med. Coll.	2	1	1	50.0	1
MINNESOTA					
Univ. of Minn., Homeopathic Dept.	4	3	1	25.0	1
NEBRASKA					
Nebraska College of Medicine	4	2	2	50.0	1
NEW YORK					
Eclectic Med. Coll. of the City of N. Y.	7	7	0	0.	1
N. Y. Coll. and Hospital for Women	3	3	0	0.	1
OHIO					
Pulte Medical College	1	1	0	0.	1
PENNSYLVANIA					
Temple College, Medical Department	9	8	1	11.1	1
TEXAS					
Baylor University, College of Medicine	8	8	0	0.	1
Fort Worth University, Med. Dept.	3	3	0	0.	1
Southwestern University, Med. Coll.	6	5	1	16.7	1
Totals	58	48	10	17.1	..

IN CONCLUSION

Our endeavor in the publication of these statistics has been to give an absolutely fair presentation of actual facts, knowledge of which is always beneficial. We feel sure this exposition of the results of the examination of applicants for license to practice medicine in the United States will help in the advancement of medical education in this country. Our acknowledgments are due to the state licensing boards whose ready cooperation and complete reports have made the publication of these data possible.

TABLE K—COLLEGES HAVING OVER 20 PER CENT. OF FAILURES BEFORE STATE BOARDS IN 1908. BASED ON TABLE C.

College.	Total Examined.	Number Passed.	Number Failed.	Per Cent. Failed.	No. of States.
ALABAMA					
University of Alabama, Medical Dept.	20	16	4	20.0	4
ARKANSAS					
University of Arkansas, Med. Dept.	4	1	3	75.0	4
CALIFORNIA					
California Eclectic Medical College	5	2	3	66.7	3
Coll. of Phys. and Surgs., Los Angeles	14	8	6	42.8	3
Coll. Phys. and Surgs., San Francisco	34	16	18	52.9	4
Hahnemann Med. Coll. of the Pacific	7	4	3	42.9	2
University of Southern California	41	27	14	34.2	3
DISTRICT OF COLUMBIA					
Geo. Washington Univ., Dept. of Med.	76	53	23	30.3	16
Howard University, Medical Depart.	46	34	12	26.1	16
GEORGIA					
Medical College of Georgia	45	36	9	20.0	7
ILLINOIS					
Hahnemann Med. Coll. and Hospital	57	45	12	21.1	14
Illinois Medical College	33	25	8	24.2	9
Jenner Medical College	38	26	12	31.6	3
National Medical University	16	9	7	43.8	7
INDIANA					
Physio-Medical College of Indiana	5	4	1	20.0	2
IOWA					
Sioux City College of Medicine	20	16	4	20.0	4
KANSAS					
Kansas Medical College	17	12	5	29.4	6
KENTUCKY					
Louisville National Medical College	6	2	4	66.7	3
University of Louisville, Medical Dept.	119	84	35	29.4	26
LOUISIANA					
Flint Medical College	17	10	7	41.2	3
MARYLAND					
Atlantic Medical College	23	14	9	39.1	2
Baltimore Medical College	161	105	56	34.8	21
Maryland Medical College	58	29	29	50.0	18
Woman's Medical College of Baltimore	9	6	3	33.3	4
MASSACHUSETTS					
College of Phys. and Surgs., Boston	43	24	19	44.2	8
MINNESOTA					
Minneapolis Coll. of Phys. and Surgs.	46	32	14	30.4	7
MISSISSIPPI					
Mississippi Medical College	18	4	14	77.8	3
MISSOURI					
American Medical College	10	8	2	20.0	3
Barnes Medical College	95	68	27	28.4	20
Ensworth Medical College	33	23	10	30.3	5
Homeopathic Med. College of Missouri	16	9	7	43.8	3
St. Louis College of Phys. and Surgs.	64	36	28	43.7	15
NORTH CAROLINA					
Leonard School of Medicine	67	44	23	34.3	12
North Carolina Medical College	13	8	5	38.4	4
OHIO					
Eclectic Medical Institute, Cincinnati	30	24	6	20.0	11
OREGON					
Willamette University, Medical Dept.	20	7	13	65.0	4
University of Oregon, Medical Dept.	23	12	11	47.8	5
PENNSYLVANIA					
Western Pennsylvania Medical College	74	59	15	20.3	6
TENNESSEE					
Chattanooga Medical College	38	20	18	47.3	9
Knoxville Medical College	6	2	4	66.7	3
Memphis Hospital Medical College	94	60	34	36.2	9
Meharry Medical College	125	62	63	50.4	17
Tennessee Medical College	23	17	6	26.1	6
University of Tenn., Dept. of Medicine	39	25	14	35.9	11
University of the South, Medical Dept.	41	22	19	46.3	14
Univ. of West Tennessee, Dept. of Med.	8	4	4	50.0	4
Totals	1797	1154	643	35.8	..

TABLE M.—REGISTRATIONS BY STATE BOARDS DURING 1908

States.	By Examination.			By Reciprocity.	Without Written Exam. or Under Exemption.	Total Registered.
	Graduates, 1903-1908.	Graduates, 1902 and Previous.	Non-graduates.			
Alabama	54	3	9	.....	.....	66
Arizona	22	14	.....	.....	.....	36
Arkansas	44	9	67	.....	22	142
California	115	30	.....	.....	.....	145
Colorado	48	4	.....	150	1	203
Connecticut	60	7	.....	2	.....	69
Delaware	8	3	.....	3	.....	14
District of Columbia	49	4	.....	.....	.....	53
Florida	53	26	.....	.....	.....	79
Georgia	143	7	.....	33	3	186
Idaho	36	16	.....	.....	.....	52
Illinois	622	24	.....	45	.....	691
Indiana	163	9	.....	24	.....	196
Iowa	136	3	.....	56	.....	195
Kansas	106	10	.....	104	4	224
Kentucky	106	1	.....	5	25	137
Louisiana	138	7	.....	4	.....	149
Maine	90	2	.....	3	.....	95
Maryland	120	2	.....	22	8	152
Massachusetts	211	22	5	.....	.....	238
Michigan	104	9	.....	54	9	176
Minnesota	74	2	.....	65	.....	141
Mississippi	60	5	73	.....	.....	138
Missouri	176	5	.....	14	.....	195
Montana	44	7	.....	.....	.....	51
Nebraska	90	13	.....	79	.....	182
Nevada	9	8	.....	15	.....	32
New Hampshire	35	2	.....	.....	3	44
New Jersey	82	7	.....	84	.....	173
New Mexico	19	11	.....	.....	108	138
New York	627	52	.....	72	.....	751
North Carolina	89	6	.....	8	.....	103
North Dakota	45	7	.....	17	.....	69
Ohio	170	12	.....	34	.....	216
Oklahoma	29	5	.....	.....	.....	34
Oregon	38	15	.....	.....	.....	43
Pennsylvania	466	19	.....	.....	.....	485
Rhode Island	23	3	3	.....	.....	29
South Carolina	46	1	.....	.....	.....	47
South Dakota	46	12	.....	.....	.....	58
Tennessee	146	12	55	26	.....	239
Texas	102	41	.....	83	.....	226
Utah	25	2	.....	14	.....	41
Vermont	41	4	.....	6	.....	51
Virginia	117	10	1	13	.....	141
Washington	130	52	.....	.....	.....	182
West Virginia	98	4	.....	.....	.....	102
Wisconsin	65	15	.....	39	1	120
Wyoming	6	1	.....	14	.....	21
Totals	5326	545	213	1092	184	7360

This table shows the total number registered during 1908 in each state by the various methods. The first column shows the recent graduates registered, the second column, the old practitioners (graduates of 1902 and previous years), the third column the non-graduates, and the fourth column shows the number licensed through reciprocity. It is interesting to note that states which have registered large numbers through reciprocity have examined very few "old practitioners:" The chief exception is New York, which has arranged reciprocal relations with only five other states. The fifth column shows those registered without written examination under various exemption clauses. The last column shows the total number of physicians registered in each state during the year.

TABLE N.—PHYSICIANS REGISTERED THROUGH RECIPROCITY BY STATE EXAMINING BOARDS DURING 1908

State Board of	Total Reg. Through Reciprocity by Each State.	Alabama.	Arizona.	California.	Colorado.	Connecticut.	Delaware.	Dist. of Columbia	Georgia.	Idaho.	Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.	Louisiana.	Maine.	Maryland.	Massachusetts.	Michigan.	Minnesota.	Mississippi.	Missouri.	Montana.	Nebraska.	Nevada.	New Hampshire.	New Jersey.	New Mexico.	New York.	North Carolina.	North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	South Carolina.	South Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	West Virginia.	Wisconsin.
Colorado	150	4	1	2	..	2	1	1	..	1	29	2	13	6	5	1	1	3	4	.....	19	3	2	.....	1	10	.....	6	3	1	13	1	..	1	3	4	2	1	1	3	3
Connecticut	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Delaware	3	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Georgia	33	.....	.....	.....	.....	.....	4	.....	.....	.....	1	1	..	4	2	2	5	.....	1	.....	2	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	.....	.....	2	.....	1	1
Illinois	45	.....	.....	.....	.....	.....	.....	.....	.....	.....	8	9	6	1	3	4	2	.....	1	3	.....	2	.....	3	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	2	2
Indiana	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	2	5	.....	.....	5	1	.....	1	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	1	2	2
Iowa	55	.....	.....	.....	.....	.....	.....	.....	1	.....	27	.....	3	.....	2	2	3	1	.....	5	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	2	2
Kansas	104	.....	.....	3	.....	.....	.....	.....	.....	.....	34	7	15	.....	14	.....	1	.....	3	1	.....	19	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	2	2	5
Kentucky	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	2	.....	.....
Louisiana	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....
Maine	3	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Maryland	22	.....	.....	.....	.....	.....	4	1	.....	.....	2	1	1	.....	.....	.....	2	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	5	2
Michigan	54	2	.....	.....	2	.....	1	.....	.....	.....	21	2	.....	.....	.....	1	1	.....	1	.....	1	4	.....	.....	.....	.....	.....	.....	8	.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	5	5
Minnesota	65	.....	.....	.....	.....	.....	.....	.....	.....	.....	21	1	14	1	1	1	1	.....	.....	2	.....	2	.....	1	2	.....	1	.....	2	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	10
Missouri	14	.....	.....	1	.....	.....	.....	.....	.....	.....	3	.....	3	1	1	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	1	.....	.....	.....
Nebraska	79	.....	.....	.....	.....	.....	.....	.....	.....	.....	21	3	21	12	1	.....	2	.....	1	4	.....	10	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1	1
Nevada	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	2	..	1	.....	.....	.....	.....	2	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	4
New Hampshire	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	.....	.....
New Jersey	84	.....	.....	1	.....	1	.....	.....	.....	.....	2	.....	.....	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	73	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
New York	72	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13	.....	.....	.....	.....	.....	40	.....	.....	.....	.....	.....	.....	.....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	.....	.....	.....
North Carolina	8	.....	.....	.....	.....	.....	.....	.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
North Dakota	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	.....	.....	1	.....	.....	1	.....	.....	3	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1
Ohio	34	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	4	.....	.....	.....	1	5	.....	9	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1
Tennessee	26	.....	.....	.....	.....	.....	.....	.....	8	.....	3	.....	.....	12	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Texas	83	.....	.....	.....	.....	.....	2	.....	.....	.....	24	1	6	..	8	.....	3	.....	5	1	17	1	.....	.....	.....	.....	.....	.....	.....	1	1	.....	2	.....	.....	.....	.....	.....	.....	.....	1	4	3	3
Utah	14	.....	.....	2	.....	.....	1	.....	2	1	1	1	.....	.....	.....	.....	.....	.....	1	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Vermont	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Virginia	13	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	2	5	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....
Wisconsin	39	.....	.....	1	.....	.....	.....	.....	.....	.....	20	.....	2	1	.....	5	.....	2	4	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....
Wyoming	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	1	4	..	.....	.....	.....	.....	.....	.....	1	3	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Total received from each state through reciprocity..	1092	4	1	2	10	2	2	14	18	1	225	33	94	32	53	24	30	3	63	23	1	61	47	4	2	46	1	100	4	6	35	3	1	15	1	4	1	14	10	3	20	15	2	13

This table shows the number of physicians registered by each state through reciprocity during 1908. "Reciprocity" is not the best term to use, however, since some states, Colorado for instance, register candidates who have satisfactory credentials including licenses, regardless as to whether the state issuing the original license reciprocates with those states or not. Taking New York as an example, reading from left to right, the table shows that New York registered a total of 72 applicants through reciprocity during 1908, of which number 13 came from Michigan, 40 from New Jersey, 9 from Ohio and 10 from Vermont. Reading from above downward, the table shows that 100 physicians left New York during 1908 and registered in other states under the reciprocity provision, of which number 10 registered in Colorado, 1 in Connecticut 1 in Louisiana, 5 in Michigan, 1 in Minnesota, 73 in New Jersey, 1 in North Carolina, 6 in Ohio and 2 in Vermont.

Colorado leads, having registered 150 physicians through reciprocity, followed by Kansas, which registered 104, New Jersey with 84, and Michigan with 83.

It is interesting to note in what states the original licenses were issued. The table shows that of 1092 applicants registered through reciprocity, 225, or over 20 per cent., obtained their original licenses in Illinois, 100 in New York, 94 in Iowa, and 63 in Michigan.

Altogether 1,092 licenses were issued through reciprocity in 1908, an increase of 103 over 1907, and 407 over 1906.

Marginal Number	NAME OF COLLEGE.	1 Alabama		2 Arizona		3 Arkansas		4 California		5 Colorado		6 Connecticut		7 Delaware		8 District of Columbia		9 Florida		10 Georgia		11 Idaho		12 Illinois		13 Indiana		14 Iowa		15 Kansas		16 Kentucky		17 Louisiana		18 Maine		19 Maryland		20 Massachusetts		21 Michigan		Marginal Number
		1	F	1	F	1	F	1	F	1	F	1	F	1	F	1	F	1	F	1	F	1	F	1	F	1	F	1	F	1	F	1	F	1	F	1	F	1	F	1	F	
	ALABAMA.																																								
1	Birmingham Medical College.—R	46	0															1	0													1	0									1
2	Univ. of Alabama, Med. Dept.—R.	13	5															1	0																							2
	ARKANSAS.																																									
3	Coll. of Phys. and Surgs.—R.						1	0																																	3
4	Univ. of Arkansas, Med. Dept.—R.																																									4
	CALIFORNIA.																																									
5	California Eclectic Med. Coll.—R.							1	3																																	5
6	Coll. of P. and S., Los Angeles.—R			1	1			6	5																																	6
7	Coll. of P. and S., San Fran.—R.							8	16																																	7
8	Cooper Medical College.—R.							27	5																																	8
9	Hahnemann M. Coll. of Pacific.—H							3	3																																	9
10	Oakland Coll. of M. and Surg.—R.							1	0																																	10
11	Univ. of Cal., Med. Dept.—R.							15	3																																	11
12	Univ. of Southern California.—R.			4	0			23	15															1	0																	12
	COLORADO.																																									
13	Denver & Gross Coll. of Med.—R.	1	0			1	0	1	0	21	4											1	0																			13
14	Denver Coll. of P. and S.—P.									3	2																															14
15	Univ. of Colo., Medical Dept.—R.									10	0											2	0																			15
	CONNECTICUT.																																									
16	Yale Medical School.—R.							1	0			21	0																									6	0			16
	DISTRICT OF COLUMBIA.																																									
17	Geo. Washington University.—R.															26	13					0	1	2	1	1	0									5	2	1	1			17
18	Georgetown Univ. School of M.—R.			1	0			1	0			1	1			7	1							1	0											4	0	2	1			18
19	Howard Univ., Med. Dept.—R.	1	0					0	1	3	1	1	0			6	0			2	0			1	1											1	2	2	1			19
	GEORGIA.																																									
20	Atlanta Coll. of P. and S.—R.	1	0															4	0	24	0													2	0							20
21	Atlanta School of Medicine.—R.	2	6					0	1									6	0	36	4													1	0							21
22	Georgia Coll. of Eclect. M. & S.—E																	0	1																							22
23	Medical College of Georgia.—R.					0	1											3	0	50	1													0	1							23
	ILLINOIS.																																									
24	American Med. Missionary Coll.—R															1	0	2	0					8	0			1	0									1	1	9	0	24
25	Bennett Coll. of Elect. M. & S.—E.			1	0																	0	1	21	4	1	0	1	0											25
26	Chicago Coll. of M. and S.—R.	1	0																					66	3	4	0	2	0									1	2			26
27	Coll. of Med. and Surg.—Ph.M.																							2	2																	27
28	Coll. of Phys. and S.—R.					2	0	4	0	0	1	0	1					2	0			5	2	103	10	5	0	1	1									1	0	1	0	28
29	Hahnemann Med. Coll. & Hosp.—H	0	1	1	0	2	0			0	1											1	1	27	7	3	0	2	1									0	1	1	0	29
30	Hering Medical College.—H.			1	0																			12	1	2	0			1	0											30
31	Illinois Medical College.—R.							0	1									1	0					16	6	4	0	0	1			1	0					1	0			31
32	Jenner Medical College.—R.																			1	0			25	11	0	1															32
33	National Medical University.—P.					1	0															1	0	4	4													1	0			33
34	Northwestern Univ. M. School.—R.			2	0			3	1	4	0											3	0	111	1	3	0	2	0									1	0			34
35	Rush Medical College.—R.			1	0	1	0	7	2									1	0			4	0	57	1	4	0	1	0	1	0							1	0			35
	INDIANA.																																									
36	Ind. Univ. School of Med.—R.																									74	0															36
37	Physio-Med. Coll. of Ind.—Ph.M.					0	1																			4	0															37
	IOWA.																																									
38	Drake Univ., Coll. of Med.—R.																											24	5													38
39	Sioux City Coll. of Medicine.—R.			1	0																							9	1											39
40	State Univ. of Iowa, C. of M.—R.							0	3																			43	7											40
41	State U. of Ia., Homeo. Dept.—H																							1	0			8	1											41
	KANSAS.																																									
42	Kansas Medical College.—R.							1	0													1	0	1	0					8	3									42
43	Univ. of Kan., School of Med.—R.							1	0																					14	0									43
44	Western Elect. Coll. of M. & S.—E																													10	1									44
	KENTUCKY.																																									
45	Louisville Nat. Med. Coll.—R.					0	1																			1	0			1	0	0	3							45
46	Southwestern Homeo. M. Coll.—H									1	1																															46
47	Univ. of Louisville, Med. Dept.—R.	1	0			3	0	0	1			1	0					2	0	4	1			2	1	12	1	1	0			28	24							0	1	47
	LOUISIANA.																																									
48	Flint Medical College.—R.																	1	0															8	5							48
49	Tulane Univ., Med. Dept.—R.	3	0	1	0	4	0									0	3	3	0	2	0													83	2							49
	MAINE.																																									
50	Med. School of Maine.—R.							1	0																									22	2			3	0			50
	MARYLAND.																																			13	0					
51	Atlantic Medical College.—P.							0	2			3	2			2	2	2	1	1	0															8	0	19	16	14	16	51
52	Baltimore Medical College.—R.																																									52
53	College of Phys. and Surg.—R.			1	0	1	0	1	0			1	0					1	0	1	1			1	0											3	0	11	6	6	0	53
54	Johns Hopkins Med. School.—R.	1	0									4	1			2										1	0	2	0							16	9	3	0	1	0	54
55	Maryland Medical College.—R.	1	0							1	0	1	2			0	2			2	1													1	0	4	11	1	3			55
56	Univ. of Md. School of Med.—R									1	0	3	0	3	0			2	0	2	0											1	0	1	0	32	15	3	0	1	0	56
57	Woman's Medical College.—R.															1	0																			3	3					57
	MASSACHUSETTS.																																								
58	Boston Univ. School of Med.—H.											2	0																					5	0			17	4			58
59	Coll. of Phys. and Surgs.—R.											1	0																					9	5			10	10			59
60	Harvard Univ. Med. School.—R.							3	0			7	1			1	0					2	0	1	0			1	0					0	1			47	0			60
61	Tufts College Medical School.—R.							0	1			4	0			0	1																	10	1			56	7			61
	MICHIGAN																																								
62	Detroit College of Medicine.—R.	1	0	1	0			1	0									1	0			0	1	1	0															28	2	62
63	Detroit Homeo. College.—H.																									2	0													4	0	63
64	U. of Mich., Dept. of M. & S.—R.			1	0			5	5									2	0	1	0	1	0			3	0	1	0			2	0					1	0	54	0	64
65	Univ. of Mich., Homeo. Dept.—H.																							1	1															6	0	65
	MINNESOTA.																																									
66	Univ. of Minn., Coll. of M. & S.—R							0	1																													1	0			66
67	U. of M., Homeopathic Dept.—H.																							2	0																	67
68	Minneapolis Coll. of P. & S.—R.																							2	0																	68
	MISSISSIPPI.																																									
69	Mississippi Med. College.—R.	0	3															0	1																							69
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		

R—Regular; H—Homeopathic; E—Eclectic; P—Panpathic; * One report not received.

Marginal Number	22 Minnesota	23 Mississippi	24 Missouri	25 Montana	26 Nebraska	27 Nevada	28 New Hampshire	29 New Jersey	30 New Mexico	31 New York	32 North Carolina	33 North Dakota	34 Ohio	35 Oklahoma*	36 Oregon	37 Pennsylvania	38 Rhode Island	39 South Carolina	40 South Dakota	41 Tennessee	42 Texas	43 Utah	44 Vermont	45 Virginia	46 Washington	47 West Virginia	48 Wisconsin	49 Wyoming	Totals: Examined	Passed	Failed	Percentage of Failures	No. States Ex'm	Marginal Number
	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F	C I F						
1									1 0											1 0								14	14	0	0.	5	1
2		1 0							1 0											1 0				1 0				23	18	5	21.8	6	2
3																													1	1	0	0.	1	3
4	0 1		0 1											0 1							3 1								7	3	4	57.1	4	4
5						1 0									1 0														6	3	3	50.0	3	5
6						1 0																							14	8	6	42.8	6	6
7						2 0									1							2 0			3 4				39	19	20	51.3	4	7
8						2 0																							34	29	5	14.7	2	8
9					1 0																								7	4	3	42.9	2	9
10															1 0														2	2	0	0.	2	10
11	1 0			1 0				0 1		1 0															1 0				23	19	4	17.4	6	11
12																													43	28	15	35.0	6	12
13	0 1				1 0		1 0		1 0							1 0						1 0			3 0			1 0	40	35	5	12.5	14	13
14																													5	3	2	40.0	1	14
15				1 0																		1 0			1 0				15	15	0	0.	5	15
16					1 0			2 0		14 0													2 0						52	52	0	0.	10	16
17				1 1					1 0	2 0	2 0			0 2							2 0	0 0	0 1	5 1	2 0				76	53	23	30.3	16	17
18	0 1						1 0			2 0			1 0		3 0	0 1	0			1 0		0		1 0					53	29	4	12.1	16	18
19			2 0					2 0		1 0					7	2	1	2	1		1 0	1 0		2 0		1 0			48	34	14	29.2	17	19
20														1 1							1 0				1 0				39	36	3	7.7	9	20
21																		1 0		0 1									58	46	12	20.7	7	21
22																					1 0								2	1	1	50.0	2	22
23								1 1	0 1												1 0				1 0				49	39	10	20.4	9	23
24				2 0										0 1	1 0			1 0							0 2				32	28	4	12.5	13	24
25				0 1										0 1				3 0	1 0					0 1		1 0			40	30	10	25.0	13	25
26	1 1 1	0 1 0		2 0						1 0	0 1			1 0				1 0							1 1	1 0			94	86	8	8.5	16	26
27																													2	0	2	50.0	1	27
28			1 1	5 1	2 1					2 2	1 1				7	0 2	1 0	4 0							10 2	1 0	8 0	1 0	199	174	25	12.6	25	28
29	1 0		3 0					1 0										1 0							4 0		1 0	66	52	14	21.2	19	29
30																									1 0		1 0		18	17	1	5.6	5	30
31			0 1																						1 0		1 0		37	26	11	29.7	12	31
32			1 0																										39	27	12	30.8	4	32
33													3 0			1 2				0 1				0 1					17	9	8	47.1	8	33
34	2 0		1 0	2 0	0 3	0			1 0				3 0	1 1	1 2			7 0	1 0		3 0			0 1	8 0		2 0		167	162	5	3.0	21	34
35	2 0		4 0	2 2	2 0								3 0	2 0	2 0	1 0		7 1			1 0	2 0			8 2		7 0	0 1	130	121	9	6.9	24	35
36				1 0											0 1										1 0				76	76	0	0.	3	36
37																													6	4	2	33.3	3	37
38					0 1										1 0										1 0				22	26	6	18.7	4	38
39				0 1											1 0			6 2							1 0				22	18	4	18.2	6	39
40													2 0		0 1			5 0	1 0	1 0					7 0				70	59	11	15.7	8	40
41																													10	9	1	10.0	2	41
42			1 0	0 1										1 0	0 2						2 0								21	15	6	28.6	9	42
43			9 0						2 0												1 0				1 0				27	27	0	0.	5	43
44														1							2 0								14	13	1	7.2	3	44
45																													6	2	4	66.7	4	45
46																													2	0	2	100.0	1	46
47		2	1 1	0		2 0			0 1				1 0	1 0	1 2	7 0		1 0		1 0	3 0	0		0 1	1 0	1 1	2 1	0	128	87	41	32.0	28	47
48		1 4																		1 0									22	11	9	45.0	4	48
49		10 3								2 0										4 0	12 1			1 0	1 0	1 0			135	120	9	6.7	13	49
50								3 1								1 0							1 0						36	33	3	8.3	6	50
51	1 1		2 0				1 3	8 0	0	18 2	3 1		2 2	0		14 3	1 3	2 1						4 5	2 1	5 0			23	14	9	39.1	2	51
52	1 1			1 0				2 0	0	9 0	2 1		2 0		1 0	5 0	1 0	1 0	2 0	2 0	2 0	1 0		0 3	23 0		1 0		171	112	59	34.5	21	52
53								2 0	0	9 0	2 1		2 0		1 0	4 1	0 1	1 0	2 0	2 0	2 0			4 0	3 0	1 0			107	95	12	11.3	26	53
54	1 1		1 0					2 0	0	18 0	0 1		2 0		1 0	5 0	1 0	1 0	2 0	2 0	2 0	1 0		2 0	3 0	1 0			73	71	2	2.7	22	54
55			0 1				0 1	0 1	1		2 1		2 0		0 1	4 3	1 1	2 0			4 0				0 1	6 1			60	30	30	50.0	19	55
56							1 0	3 0	0	5 0	18 1		2 0			5 4	1 0	5 0	4 0	1 0			1 0	4 0	1 1	6 1			124	102	22	17.7	23	56
57											1 0															1 0			9	6	3	33.3	4	57
58										2 0							1 0												33	29	4	12.1	6	58
59										1 2														1 0	0 2	2 1	0 1		45	24	21	46.7	8	59
60	1 0			0 1	1 0	1 0	1 1			10 3								5 1		1 0				4 0	1 0		1 0		98	80	18	18.2	19	60
61			1 0				8 1			3 1			1 0			0 1	3 2		1 0	2 0				2 0	1 0				115	100	15	13.0	16	61
62															1 0	1 1									3 0				42	38	4	9.5	10	62
63																1 0													6	6	0	0.	2	63
64	1 0			5 3					0 1	3 0			5 0		1 0	3 0			1 0		2 0				10 0		1 0		112	103	9	8.0	21	64
65													2 0			1 0									0 1				12	11	2	15.4	6	65
66	30 5			4 0								7 0			1 0			3 0		1 0					10 2		1 0		68	60	8	11.8	11	66
67	1																												4	3	1	25.0	1	67
68	21 9			0 2						1 0		5 3			1 1			3 0							1 0				49	34	15	30.6	8	68
69		4 10																											18	4	14	77.8	3	69
	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49						

Marginal Number	NAME OF COLLEGE.	1 Alabama		2 Arizona		3 Arkansas		4 California		5 Colorado		6 Connecticut		7 Delaware		8 District of Columbia		9 Florida		10 Georgia		11 Idaho		12 Illinois		13 Indiana		14 Iowa		15 Kansas		16 Kentucky		17 Louisiana		18 Maine		19 Maryland		20 Massachusetts		21 Michigan		Marginal Number
		R	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	
	MISSOURI.																																									
70	American Medical College.—E			1	0							1	0																									1	0			70
71	Barnes Medical College.—R			2	0	5	1	0	1	1	0											2	4	33	11			1	1	3	0	1	1					0	1			71
72	Ensworth Medical College.—R					0	1																					0	1	15	3											72
73	Homeopathic Med. Coll. of Missouri.—H																							3	5	2	0			1	0											73
74	Kansas City Hahnemann Med. Coll.—H					1	0																					1	0	6	0											74
75	St. Louis University, School of Med.—R					3	0															1	1	43	1			1	1	1	0											75
76	St. Louis Coll. of Phys. and Surg.—R			1	0	1	0	0	1	1												0	1	17	12	0	1															76
77	University of Missouri, Medical Dept.—R			1	0			1	0																	1	0															77
78	University Medical Coll., Kansas City.—R					1	0	1	1	1	0													37	1																	78
79	Washington University, Med. Dept.—R					2	0	0	1											1	0			44	5																	79
	NEBRASKA.																																									
80	John A. Creighton Medical Coll.—R											0	1											0	1	1																80
81	Lincoln Medical College.—E											1	0																	2	0											81
82	Nebraska College of Medicine.—R																																								82
83	University of Nebraska, Coll. of Med.—R																																									83
	NEW HAMPSHIRE.																																								
84	Dartmouth Medical School.—R											0	1					1	0					1	0	1	0							0	1	1	0			1	0	84
	NEW YORK.																					1	0																			
85	Albany Medical College.—R																																					1	0			85
86	College of Phys. and Surg., New York.—R							3	0			4	1					2	0	1	0									1	0			3	0			2	0	1	0	86
87	Cornell Univ. Medical College.—R											1	0							1	0																	1	0			87
88	Eclectic Med. Coll. of City of New York.—E																																								88
89	Long Island College Hospital.—R							1	0													0	1	1	0									0	1	2	0					89
90	New York Homeo. Med. Coll. and Hosp.—H							2	0																											2	0					90
91	N. Y. Med. Coll. and Hosp. for Women.—H																																								91
92	Syracuse University, Coll. of Med.—R											1	0									1	0																			92
93	Univ. and Bellevue Hosp. Med. Coll.—R											3	0											1	0	1	0											4	0			93
94	University of Buffalo, Med. Dept.—R																			1	0																					94
	NORTH CAROLINA.																																								
95	Leonard School of Medicine.—R	0	1													0	1			6	0													3	0			1	0			95
96	North Carolina Medical College.—R																			1	0																	1	1			96
97	Univ. of North Carolina, Med. Dept.—R																	1	0																							97
	OHIO.																					1	0																			
98	Cleveland Coll. of Phys. and Surg.—R											1	0																													98
99	Cleveland Homeo. Medical College.—H																																					1	0			99
100	Eclectic Medical Institute.—E							1	0	0	1													1	0	5	0					3	1							0	1	100
101	Medical College of Ohio.—R							0	1									1	0			0	1	1	0	2	0					3	0									101
102	Miami Medical College.—R							2	2									1	0							3	0					1	0									102
103	Pulte Medical College.—H																							1	0							1	0									103
104	Starling-Ohio Medical College.—R																																									104
105	Toledo Medical College.—R							0	1																																	105
106	Western Reserve Univ. Med. Dept.—R																									1	0											1	0			106
	OREGON.																																								
107	Willamette Univ., Medical Dept.—R																																									107
108	University of Oregon, Medical Dept.—R																							1	0																	108
	PENNSYLVANIA.																																								
109	Hahnemann Med. Coll. and Hospital.—H											1	0	1	0													2	0					1	0	1	0					109
110	Jefferson Medical College.—R	1	0	3	0	1	0	6	2			2	1	2	0	0	3	1	0			1	0	5	0	2	0			2	0			1	0	3	0	2	2	2	0	110
111	Medico-Chirurgical Coll. of Philadelphia.—R							1	2									1	0			1	0	1	0	1	0							1	0	1	0	1	0			111
112	Temple College, Medical Dept.—R																																								112
113	University of Penn., Dept. of Medicine.—R			1	0			4	1					1	0	1	0					1	0	2	0			1	0	2	0					9	0	1	0			113
114	Western Pennsylvania Med. College.—R											0	1							1	0			2	0																	114
115	Woman's Med. Coll. of Pennsylvania.—R															1	0					1	0									1	0			2	0	5	0	4	0	115
	SOUTH CAROLINA.																																									
116	Med. Coll. of the State of So. Carolina.—R																	4	0	2	0																					117
	TENNESSEE.																																									
117	Chattanooga Medical College.—R	0	4			0	1											2	0	6	0													1	0							117
118	Coll. of Phys. and Surg., Memphis.—R																			2	0																					118
119	Knoxville Medical College.—R																																								119
120	Memphis Hospital Medical College.—R	4	3			3	1											1	1													16	6									120
121	Meharry Medical College.—R	1	4			3	8											1	3	1	0			0	1	0	1	0	1	2	4	2	2									121
122	Tennessee Medical College.—R																	1	0																							122
123	University of Nashville, Med. Dept.—R	3	5			2	0											3	0	4	0									1	0	0	1	9	1							123
124	University of Tennessee, Dept. of Med.—R	2	3	0	1	1	0											2	0	2	0							1	0			1	1	1	0							124
125	University of the South, Med. Dept.—R	1	1			1	0							1	0			5	0	1	0											1	3	1	1	1	1					125
126	University of West Tenn., Med. Dept.—R					0	1													0	1																					126
127	Vanderbilt University, Med. Dept.—R	6	1			3	0															0	1									4	0			1	0					127
	TEXAS.																																									
128	Baylor University, Coll of Med.—R																																								128
129	Fort Worth University, Medical Dept.—R			0	1																																				129
130	Southwestern University Med. Coll.—R																																								130
131	University of Texas, Dept. of Med.—R					1	0	1	0																									1	0							131
	VERMONT.																																								
132	University of Vermont, College of Med.—R									0	1			1	0																					3	0			8	4			132
	VIRGINIA.																																									
133	Medical College of Virginia.—R			1	0																																					133
134	University of Virginia, Dept. of Med.—R	1	0	1	0													1	0					1	0	1	0															134
135	University College of Medicine.—R													2	0					1	0	1	0															0	1			135
	WISCONSIN.																																									
136	Marquette University, Med. Dept.—R																							1	0																	136
137	Wisconsin College of Phys. and Surg.—R																																									137
138	Canadian Colleges			1	0			2	0	1	0	1	1	1	0			1	0			2	0	1	0	1	0	3	0	1	0					13	0			6	7	1	0	138
139	Foreign			1	0	1	0	3	2	1	0	1	2					1	0			1	0	6	1	1	0	1	0	1	0	1	0							2	7			139
140	Miscellaneous Medical Colleges							3	11	3	2	3	1					3	4	11	4	5	5	8	1	14	6	27	4	27	20	9	5	57	25	9	7	1	1	0	3	6	2	140
141	Undergraduates	9	27			67	63																									0	0							5	32			141
	Totals by States	13*		4*		26*		21*		6*		8*		1*		8*		9*		8*		16*		68*		74*		17*		18*		13*		17*		10*		26*		34*		11*		
	Totals—Examined—Passed	6		3*		12*		14*		5*		6*		1*		5*		7*		9*		15*		52*		64*		17*		12*		10*		14*		9*		12*		23*		11*		
	Total—Examined—Failed	6*		4		8*		6*		1*		1*		0		3*		2*		1*		1*		16*		10*		7		4*		1*		3*		1*		2*		3*		0		
	Percentage of Failures	50.0		10.0		41.5		30.0		21.2		19.2		0		40.4		11.2		8.5		23.5		12.9		3.9		23.0		13.4		36.3		16.7		10.7		35.0		31.2		5.0		
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		

R, Regular; H, Homeopathic; E, Eclectic; P, Panpethic. *One report not received.

Marginal Number	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49						
	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma*	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Ex. in	Margin Number
	F F	F F	F F	F F	F F	F F	F F	F F	F F	F F	F F	F F	F F	F F	F F	F F	F F	F F	F F	F F	F F	F F	F F	F F	F F	F F	F F	F F						
70			6 2																										11	9	2	18.1	4	70
71				1					1 0					1 1	0 1				0 1	12 0	3 0				2 2		1 1		104	72	32	30.8	22	71
72			7 3		1 0								1 0		0 1	1 0													36	25	11	30.6	8	72
73			4 4																										18	10	8	44.4	4	73
74			4 12						1 0																				15	13	2	13.3	5	74
75			31 17	3 1					1 0			1 0			1 0	1 0													100	87	13	13.0	11	75
76	1	2	8 7						1 0						0 2	1 1			0 1	1 1	4 1			0 1	1 3		1 0		73	38	35	47.9	18	76
77			10 0						1 0						0 1														15	14	1	6.7	6	77
78			24 7	2 1						1 0		0 1		1 0 1	0									1 1					82	70	12	14.6	11	78
79			42 3	0 1										1 0					1 0					2 1					107	94	13	12.1	10	79
80			0 1	2 1	34 6			1 0		0 1					1 0							1 1		0 2			1 0	64	49	15	23.4	13	80
81			0 1		13 1														2 0										20	18	2	10.0	3	81
82					12																								4	2	2	50.0	1	82
83					32 0							1 0																	33	33	0	0.	2	83
84							4 1			0 1		1 0					1 0												23	19	4	17.4	12	84
85								0 1		43 0				1 0	1 0	1 0			1 0										50	49	1	2.0	8	85
86	1 0			0 1	1 0	1 0		3 0		88 3	1 0				1 0	2 0						1 1		2 0					124	118	6	4.8	19	86
87	1 0							1 0		62 0					1 0		1 0												69	69	0	0.	8	87
88										7 0																			7	7	0	0.	1	88
89								5 2		87 4			1 0																107	97	8	7.6	8	89
90										22 0						1 0													27	27	0	0.	4	90
91										3 0																			3	3	0	0.	1	91
92	0 1									38 0																			41	40	1	2.4	4	92
93								3 0		76 2			1 0			3 0													94	92	2	2.1	8	93
94				1 0						47 0											1 0				1 0				51	51	0	0.	5	94
95	3	1									15 3					5 1	0 1	3 5						5 10		3 0			67	44	23	34.3	12	95
96											5 4										1 0								13	8	5	38.4	4	96
97											13 1																		15	14	1	6.7	2	97
98										1 0			18 0			1 0				1 0									24	24	0	0.	7	98
99													7 0	1 1		4 0													16	15	1	6.3	6	99
100										2 0			6 3		0 1	3 0			1 0		1 0								34	26	8	23.5	14	100
101				1 0		1 0						1 0	23 0							0 1	1 0				1 1	3 1			43	38	5	11.6	14	101
102	0 1			1 0								1 0	14 1								1 0				2 1	1 1			32	26	6	18.7	10	102
103													1 0												1 1				2	0	2	15.0	4	103
104												1 0	30 0		0 1	1 0										1 0			34	33	1	2.9	5	104
105												1 0	3 0												1 0				6	5	1	16.7	4	105
106			1 0			1 0							29 0			2 0													35	35	0	0.	6	106
107																									4 2				28	7	21	75.0	8	107
108															5 11				1 0						5 0			1 0	24	13	11	45.8	5	108
109			1 0					3 1		3 0					2 0	23 1													43	40	3	7.0	13	109
110				1 0			2 0	11 0		8 2	15 0	2 0	6 0	1 0		33 0								7 5	2 0	1 0			236	212	20	8.6	33	110
111								7 0		3 1						65 2	1 0					1 0		3 2					95	88	7	7.4	14	111
112																8 1													9	8	1	11.1	1	112
113	3 0		1 0	1 1	1 0		1 0	19 0		14 0	2 0		4 0			54 14								1 0	7 0	2 2	0 1	0	196	194	2	1.0	27	113
114								1 0								60 0	2 0									2 0	1 0		76	61	15	19.7	7	114
115			1 0				1 0	7 0		6 0			1 0			16 0		1 0											49	49	0	0.	14	115
116																	17 3												28	24	4	14.3	4	116
117	2	1							1 0		0 1								10 10	2 1						1 1			44	25	19	43.2	11	117
118	3																		6 0										13	11	2	15.4	3	118
119											0 1								6 0	0 1									6	2	4	66.7	3	119
120	17	21							4 0					0 1					16 2	9 4									111	72	39	35.1	9	120
121	0	12	3 0		1 2						0 1		0 1	4 0					30 9	4 5				2 1					129	64	65	50.5	19	121
122									0 1		3 0			0 1					11 3					2 1	2 1				28	19	9	32.1	8	122
123	11	6	3 0						2 0		2 2								20 7	3 2				1 0	1 1	1 1	0		90	73	17	18.9	18	123
124	0	1							3 0		1 3								14 7	2 2				0 1	1 2				54	33	21	38.9	10	124
125	3	2							1 0		1 1								1 1	5 1				2 6					48	28	20	41.7	10	125
126																			3 2										8	4	4	50.0	4	126
127	1	0	1 0																10 0	5 0				1 0	1 1				38	35	3	7.9	12	127
128																				8 0									8	8	0	0.	1	128
129									1 0											3 0									5	4	1	20.0	3	129
130																				5 1									6	5	1	16.7	1	130
131									1 0											21 0					1 0				26	26	0	0.	6	131
132							3	3 1 0		4 0				1 0	0 1								32 1		2 0	1 0			66	56	10	15.2	12	132
133											3 0			2 0										36 4		4 0			51	46	5	9.8	6	133
134		1 0		2 0				2 0		1 0	1 0		1 0		1 0			2 0		1 0			8 4		1 0			31	27	4	12.9	17	134
135										2 0	4 2						1 0							34 0		4 0			52	49	3	5.8	9	135
136										1 0		1 0													1 0		33 5		42	37	5	11.9	5	136
137												0 1															10 0		12	11	1	8.3	3	137
138	6 2			1 0	6 1	2 1		2 2	0	15 2			2 1	1 0		4 0	0 2		1 1			3 2		14 0		2 0	1 0		126	102	24	19.0	31	138
139	1 0			1 0	0 1	2 1	2 0	0 5		46 39			1 0	4 0	2 1	5 6	0 1			1 0	1 0	1 1	1 0	4 0					160	92	68	42.5	31	139
140	1 2	1 6	3 0	2 4	2 1	1 0	1 0	3 0	5 0	2 5	1 1	1 3	5 0	6 1	1 5	7 3	2 3		5 0	2 2	9 4		1 0	6 15	15 11	4 0	0 17	1	409	306	197	39.4	48	140
141		73	109							0 1							3 3			55 45				1 0					49	21	28	57.1	5	141
	101	322	231	78	119	17	55	109	32	752	121	62	188	44	196	534	46	68	64	300	166	32	51	181	242	120	87	1	777					
	76	138	181	51	103	17	37	89	30	679	95	52	182	34	43	485	32	47	58	213	143	28	44	138	187	102	87	1	1	98				
	25	184	50	27	16	0	18	20	2	73	26	10	6	10	68	49	17	21	6	87	23	5	7	53	60	18	7	2		1080				
	24.8	27.1	21.6	34.6	13.4	0.	30.2	16.1	6.2	9.7	21.5	16.1	3.2	22.7	50.4	9.2	17.0	30.9	9.4	30.0	13.9	15.9	11.3	29.	24.3	15.4	8.0	22.			21.			
	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49						

Marginal Number.	NAME OF COLLEGE.	1 Alabama		2 Arizona		3 Arkansas		4 California		5 Colorado		6 Connecticut		7 Delaware		8 District of Columbia		9 Florida		10 Georgia		11 Idaho		12 Illinois		13 Indiana		14 Iowa		15 Kansas		16 Kentucky		17 Louisiana		18 Maine		19 Maryland		20 Massachusetts		21 Michigan		Marginal Number.
		I		I		I		I		I		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	
	ALABAMA.																																										
1	Birmingham Medical College.—R	19	0																																								1
2	University of Alabama, Medical Dept.—R	13	4															1	0															1	0									2
	ARKANSAS.																																									
3	College of Phys. and Surg., Little Rock—R					1	0																																			3
4	University of Arkansas, Medical Dept.—R																																									4
	CALIFORNIA.																																									
5	California Eclectic Medical College.—R																																									5
6	College of Phys. and Surg., Los Angeles.—R							5	4																																	6
7	College of Phys. and Surg., San Fran.—R							5	4																																	7
8	Cooper Medical College.—R							22	2																																	8
9	Hahnemann Med. Coll. of the Pacific—H							4	3																																	9
10	Oakland College of Med. and Surg.—R							1	0																																	10
11	University of California, Med. Dept.—R							11	3																																	11
12	University of Southern Cal., Coll of Med.—R			2	0			19	6															1	0																	12
	COLORADO.																																									
13	Denver and Gross College of Medicine.—R							1	0	13	3																															13
14	Denver College of Phys. and Surg.—P									1	2																															14
15	University of Colorado, Medical Dept.—R									10	0																															15
	CONNECTICUT.																																									
16	Yale Medical School.—R											15	0																									3	0			16
	DISTRICT OF COLUMBIA.																																									
17	George Washington Univ., Dept. of Med.—R													15	6									0	1											4	0					17
18	Georgetown Univ., School of Medicine.—R											1	1		0																					3	0					18
19	Howard University, Medical Dept.—R	1	0									1	0		4									1	0											0	1					19
	GEORGIA.																																									
20	Atlanta Coll. of Phys. and Surg.—R	1	0																	3	0																					20
21	Atlanta School of Medicine.—R	2	2					0	1							4	0	3	0	4														1	0							21
22	Georgia Coll. of Eclectic Med. and Surg.—E																																									22
23	Medical College of Georgia.—R																	1	0	3	0	1												0	1							23
	ILLINOIS.																																									
24	American Medical Missionary College.—R																																							2	0	24
25	Bennett Coll. of Eclectic Med. and Surg.—E																							21	4			1	0													25
26	Chicago College of Med. and Surg.—R	1	0																					9	3	4	0	2	0													26
27	College of Medicine and Surg.—Ph. M																							1	1																	27
28	College of Physicians and Surgeons.—R																					2	0	99	9	2	0	1	0											1		28
29	Hahnemann Med. Coll. and Hospital.—H					1	0																	26	6	2	0	1	1													29
30	Hering Medical College.—H			1	0																			11	1	1	0			1	0											30
31	Illinois Medical College.—R							0	1															14	6	2	0					1	0									31
32	Jenner Medical College.—R																			1	0			23	8																	32
33	National Medical University.—P					1	0																															1	0			33
34	Northwestern University Med. School.—R							2	1	1	0											1	0	105	1	2	0	1	0													34
35	Rush Medical College.—R							2	1															50	0	1	0															35
	INDIANA.																																									
36	Indiana University, School of Medicine.—R																									70	0															36
37	Physio-Medical College of Ind.—Ph. M																									4	0															37
	IOWA.																													23	5											38
38	Drake University, College of Med.—R																													7	1											39
39	Sioux City College of Medicine.—R																													43	6											40
40	State University of Iowa, College of Med.—R																							1	0			8	1													41
41	State Univ. of Iowa, Homeopathic Dept.—H																																									
	KANSAS.																															8	0									42
42	Kansas Medical College.—R																							1	0							13	0									43
43	University of Kansas, School of Med.—R																															7	1									44
44	Western Eclectic Coll. of Med. and Surg.—E																																									
	KENTUCKY.																																									
45	Louisville National Med. College.—R																									1	0			1	0	0	3									45
46	Southwestern Homeopathic Med. Coll.—H																																									46
47	University of Louisville, Med. Dept.—R	1	0			2	0					1	0					1	0	1	1			2	0	0	1	1	0			26	2							0	1	47
	LOUISIANA.																																									
48	Flint Medical College.—R																																									48
49	Tulane University, Medical Dept.—R					2	0									2	2	0	1	0														78	1							49
	MAINE.																																									
50	Med. School of Maine, Bowdoin Coll.—R																																			22	2			1	0	50
	MARYLAND.																																									
51	Atlantic Medical College.—P																																					13	0			51
52	Baltimore Medical College.—R											2	1			1	0																			2	0	17	8	2	8	52
53	College of Phys. and Surg., Baltimore.—R																																			2	0	8	2	4	0	53
54	Johns Hopkins Medical School.—R	1	0									3	1			1	0																				15	0		1	0	54
55	Maryland Medical College.—R	1	0									1	1			0	1			2	0																1	4	0	1			55
56	University of Maryland, School of Med.—R																			1	0																25	8	2	0			56
57	Woman's Med. College of Baltimore.—R																																				3	2					57
	MASSACHUSETTS.																																									
58	Boston University, School of Medicine.—H																																			5	0			14	2	58
59	College of Physicians and Surgeons.—R											1	0																							5	3			7	0	59
60	Harvard University Medical School.—R							1	0			3	0																											30	0	60
61	Tufts College, Medical School.—R											2	0																							9	1			48	0	61
	MICHIGAN.																																									
62	Detroit College of Medicine.—R																																							25	2	62
63	Detroit Homeopathic College.—H																																							4	0	63
64	Univ. of Mich., Dept. of Med. and Surg.—R																					1	0			3	0					2	0							53	0	64
65	University of Mich., Homeopathic Dept.—H																																	1	0					5	0	65
	MINNESOTA.																																									
66	Univ. of Minn., Coll. of Med. and Surg.—R																																									66
67	University of Minn., Homeopathic Dept.—H																																									67
68	Minneapolis College of Phys. and Surg.—R																					2	0																			68
	MISSISSIPPI.																																									
69	Mississippi Medical College.—R	0	3															0	1																							69
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21	

R—Regular; H—Homeopathic; E—Eclectic P—Panpathic; * One report not received.

Marginal Number	22 Minnesota	23 Mississippi	24 Missouri	25 Montana	26 Nebraska	27 Nevada	28 New Hampshire	29 New Jersey	30 New Mexico	31 New York	32 North Carolina	33 North Dakota	34 Ohio	35 Oklahoma*	36 Oregon	37 Pennsylvania	38 Rhode Island	39 South Carolina	40 South Dakota	41 Tennessee	42 Texas	43 Utah	44 Vermont	45 Virginia	46 Washington	47 West Virginia	48 Wisconsin	49 Wyoming	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. Never Examined	Marginal Number
	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F						
1									1 0																				11	11	0	0.		1
2		1 0																											19	15	4	21.1	2	2
3														0 1															1	1	0	0.	1	3
4			0 1																		1 0								3	1	2	66.7	3	4
5																																		5
6						1 0																							10	6	4	40.0	2	6
7						1 0																6			1 0				12	8	4	33.3	4	7
8																													24	22	2	8.3	1	8
9					1 0																								7	4	3	42.9	2	9
10															1 0														2	2	0	0.	2	10
11																													14	11	3	21.4	3	11
12																													28	22	6	21.4	3	12
13					1 0			1 0																					21	18	3	14.3	4	13
14																													5	3	2	40.0	1	14
15																													11	11	0	0.	2	15
16								2 0		3 0													12 0						25	25	0	0.	5	16
17									1 0		1 0				0 1						1 0	1 0		2 1					34	25	9	26.5	9	17
18										1 0			1 0			3 0	1 0									1 0			16	15	1	6.3	7	18
19								2 0								6 0					1 0								20	15	5	25.0	9	19
20											1 0							1 1											29	28	1	3.4	5	20
21																		1 0		0 1									53	44	9	17.0	7	21
22																																		22
23																		2 4											39	33	6	15.4	4	23
24																													3	3	0	0.	1	24
25																													37	33	4	14.8	3	25
26		1 0							1 0					1 1 1 0					1 0							1 0		86	80	6	7.0	11	26
27																													2	1	1	50.0	1	27
28				1 0									1 0	2 0	1 0										0 2	7 0			126	115	11	8.7	12	28
29									1 0					1 0											3 0				43	35	8	18.6	8	29
30																											1 0		16	13	1	6.3	5	30
31														1 0															25	18	7	28.0	3	31
32																													32	24	8	25.0	2	32
33																1 0													3	3	0	0.	3	33
34	2 0				2 0							2 0			0 1				1 0			1 0		0 1	2 0		1 0		128	124	4	3.1	15	34
35													1 0														2 0		57	56	1	1.8	3	35
36				1 0																									71	71	0	0.	2	36
37																													4	4	0	0.	1	37
38																													28	23	5	17.9	1	38
39																			4 0										12	11	1	8.3	2	39
40																									1 0				50	44	6	12.0	2	40
41																													10	9	1	10.0	2	41
42																					1 0								11	11	0	0.	4	42
43				1 0																									21	21	0	0.	2	43
44				8 0																	1 0								9	8	1	11.1	2	44
45																													5	2	3	60.0	3	45
46																																		46
47		3 1											1 0	1 0	0 1	5 0				1 0	2 0					1 1			88	60	28	31.8	19	47
48		1 0																											12	8	4	33.3	2	48
49		4 1																			10 0								103	99	4	3.9	8	49
50								1 1															1 0						28	25	3	10.7	4	50
51																1 0													23	14	9	39.1	2	51
52				1 0				3 0		8 0	1 1					11 1	1 0	1 0								3 0			81	62	19	23.4	14	52
53								1 0		4 0	0 1					12 1						3 0				19 0			57	53	4	7.0	16	53
54								1 0		3 0	1 0				1 0	3 0						1 0		1 0		3 1			45	33	12	26.7	12	54
55								0 1			1 1										1 0								19	9	10	52.6	10	55
56								2 0		1 0	11 0																			55	9	14.1			56
57																										1 0			8	5	3	37.5			57
58																	1 0												22	20	2	9.1	3	58
59							4						1 0				0 1												24	13	11	45.8	3	59
60					1 0					3 0										1 0									41	33	8	19.5	8	60
61													1 0																72	64	8	11.1	6	61
62																													27	25	2	7.5	1	62
63																													4	4	0	0.	1	63
64					1 1					1 0						2 0					1 0				3 0				73	72	1	1.4	10	64
65																1 0													9	9	0	0.	4	65
66	24 3			1 0								1 0							1 0		1 0				1 0				32	29	3	9.4	6	66
67	2 1																		1 0										3	2	1	33.3	1	67
68	17 0											2 0			1														32	23	9	28.1	5	68
69		2 2																											11	3	11	78.6	3	69
	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49						

Marginal Number	NAME OF COLLEGE.	1 Alabama	2 Arizona	3 Arkansas	4 California	5 Colorado	6 Connecticut	7 Delaware	8 District of Columbia	9 Florida	10 Georgia	11 Idaho	12 Illinois	13 Indiana	14 Iowa	15 Kansas	16 Kentucky	17 Louisiana	18 Maine	19 Maryland	20 Massachusetts	21 Michigan	Marginal Number
	MISSOURI.																						
70	American Medical College.—E																						70
71	Barnes Medical College.—R		1	0	2	0						2	1	32	9		0	1	1	0			71
72	Ensworth Medical College.—R																0	1	14	0			72
73	Homeopathic Med. College of Missouri.—H												3	4	2	0							73
74	Kansas City Hahnemann Med. College.—H				1	0										1	0	0	0				74
75	St. Louis University, School of Med.—R				2	0						1	1	42	1		1	1	1	0			75
76	St. Louis College of Phys. and Surg.—R						0	1						15	11								76
77	University of Missouri, Medical Dept.—R		1	0																			77
78	University Medical College, Kansas City.—R					1	1																78
79	Washington University, Med. Dept.—R													40	4								79
	NEBRASKA.																						
80	John A. Creighton Medical College.—R													1	0			2	0				80
81	Lincoln Medical College.—E																						81
82	Nebraska College of Medicine.—R																						82
83	University of Nebraska, College of Med.—R																						83
	NEW HAMPSHIRE.																						
84	Dartmouth Medical School.—R																				5	0	1 0 84
	NEW YORK.																						
85	Albany Medical College.—R																						85
86	College of Phys. and Surg., New York.—R					1	0												3	0			86
87	Cornell University Medical College.—E																						87
88	Eclectic Med. Coll. of City of New York.—E																						88
89	Long Island College Hospital.—R																						89
90	New York Homeo. Med. Coll. and Hosp.—H					1	0																90
91	N. Y. Med. Coll. and Hosp. for Women.—H																						91
92	Syracuse University, Coll. of Med.—R							1	0														92
93	Univ. and Bellevue Hosp. Med. Coll.—R							2	0						1	0							93
94	University of Buffalo, Med. Dept.—R																						94
	NORTH CAROLINA.																						
95	Leonard School of Medicine.—E								0	1		5	0					3	0		1	0	95
96	North Carolina Medical College.—R											1	0										96
97	Univ. of North Carolina, Med. Dept.—R									1	0	1	0										97
	OHIO.																						
98	Cleveland College of Phys. and Surg.—R																						98
99	Cleveland Homeo. Medical College.—H																						99
100	Eclectic Medical Institute.—E						0	1					1	0	5	0		3	1				100
101	Medical College of Ohio.—R														1	0		2	0				101
102	Miami Medical College.—R																	1	0				102
103	Pulte Medical College.—H																						103
104	Starling-Ohio Medical College.—R																						104
105	Toledo Medical College.—R																						105
106	Western Reserve Univ. Med. Dept.—R														1	0							106
	OREGON.																						
107	Willamette Univ., Medical Dept.—R		1	0																			107
108	University of Oregon, Medical Dept.—R																						108
	PENNSYLVANIA.																						
109	Hahnemann Med. Coll. and Hospital.—H														2	0							109
110	Jefferson Medical College.—R	1	0		1	0	0		2	1		0	2	4	0		1	0	1	0	2	0	4	1 3 0 110
111	Medico-Chirurgical Coll. of Philadelphia.—R																		1	0	1	0	111
112	Temple College, Med. Dept.—R																						112
113	University of Penn., Dept. of Medicine.—R								1	0										7	0		113
114	Western Pennsylvania Med College.—R												1	0									114
115	Woman's Med. Coll. of Pennsylvania.—R									1	0								1	0	5	0	1 0 115
	SOUTH CAROLINA.																						
116	Med. Coll. of the State of So. Carolina.—R										1	0	1	0									116
	TENNESSEE.																						
117	Chattanooga Medical College.—R	0	4		0	1					1	0											117
118	College of Phys. and Surg., Memphis.—R											1	0										118
119	Knoxville Medical College.—R																						119
120	Memphis Hospital Medical College.—R	5	3		3	1												15	4				120
121	Meharry Medical College.—R	1	4		2	4					1	2	9	0			1	4	1	0			121
122	Tennessee Medical College.—R										2	0	4	0									122
123	University of Nashville, Med. Dept.—R	2	5		1	0											0	1	7	1			123
124	University of Tennessee, Dept. of Med.—R				1	0						2	0				0	1	1	0			124
125	University of the South, Med. Dept.—R	0	1								1	0									1	1	125
126	University of West Tenn., Med. Dept.—R											0	1										126
127	Vanderbilt University, Med. Dept.—R	5	1		3	0											3	0					127
	TEXAS.																						
128	Baylor University, College of Med.—R																						128
129	Fort Worth University, Med. Dept.—R																						129
130	Southwestern University Med. Coll.—R																						130
131	University of Texas, Dept. of Med.—R				1	0																	131
	VERMONT.																						
132	University of Vermont, Coll. of Med.—R																		3	0	3	0	132
	VIRGINIA.																						
133	Medical College of Virginia.—R																						133
134	University of Virginia, Dept. of Med.—R																						134
135	University Coll. of Medicine.—R								2	0		1	0										135
	WISCONSIN.																						
136	Marquette University, Med. Dept.—R												1	0									136
137	Wisconsin College of Phys. and Surg.—R																						137
138	Canadian Colleges			1	0			1	1										7	0		0	1 138
139	Foreign																						139
140	Miscellaneous Medical Colleges	1	1		1	6	0	1		1	0		1	3	3	4	1	0	2	0	16	2	24	16	3	0	49	24	2	4				140
	Totals by States	49	7	37	107	38	41	4	11	24	13	13	693	121	157	91	144	131	70	144	159	96	
	Totals—Examined—Passed	48	7	25	78	31	39	4	23	18	12	11	540	118	142	90	88	119	62	107	133	93	
	Totals—Examined—Failed	31	0	12	29	7	2	0	10	7	1	2	65	3	15	1	56	12	8	37	26	3	
	Percentage of Failures	39.2	0.	32.4	27.1	18.4	12.2	0.	30.1	25.6	8.1	7.5	10.5	2.5	21.1	1.1	38.8	9.2	11.4	25.7	16.4	3.1	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	

V 19

Marginal Number	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49					
	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma*	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam'd	Marginal Number
	I F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F					
70			5 1																	12 0					1 0		1 0		6	5	1	83.3	1	70
71			4 1	1 0					1 0																				65	54	11	16.9	11	71
72			4 1		1 0																								26	22	4	15.4	4	72
73			4 3																										16	9	7	43.8	3	73
74			4 3																										14	12	2	14.3	4	74
75			22 5	2 0												1 0													87	79	8	9.2	8	75
76	1	2 8	5						1 0					0 1						1 1	3 0			1 0					51	30	21	41.2	9	76
77			9						1 0																1 0				11	11	0	0.	3	77
78			22										1 0	1 0										1 0					66	58	8	12.1	6	78
79			38 5																					0 1					88	78	10	11.4	3	79
80			0 1	1 1	33 4			1 0											2 0								1 0	45	39	6	13.3	7	80
81					12 0																								16	16	0	0.	3	81
82					1 1																								2	1	1	50.0	1	82
83					23 0																								23	23	0	0.	1	83
84																													6	6	0	0.	2	84
85										33 0																			33	33	0	0.	1	85
86										43 2																			49	47	2	4.1	3	86
87								1 0		44 0																			45	45	0	0.	2	87
88										5 0																			5	5	0	0.	1	88
89								3 0		2 0																			58	56	2	3.4	3	89
90										16 0			1 0																17	17	0	0.	2	90
91										3 0																			3	3	0	0.	1	91
92										37 0																			39	39	0	0.	3	92
93								3 0		60 2						1 0													69	67	2	2.9	5	93
94										31 0																			31	31	0	0.	1	94
95		3 1									15 2					2 0		3 4						2 7		3 0			52	37	15	28.9	10	95
96											4 2																		7	5	2	28.6	2	96
97											12 1																		14	13	1	7.2	2	97
98							1 0			1 0			17 0																19	19	0	0.	3	98
99													7 0			4 0													11	11	0	0.	2	99
100													5 2			2 0			1 0										23	19	4	17.4	8	100
101													23 0												2 0				28	28	0	0.	4	101
102													13 1												1 1				17	15	2	11.8	3	102
103																																	103
104												1 0	30 0		0 1	1 0									1 0				34	33	1	2.9	5	104
105													3 0																3	3	0	0.	1	105
106													29 0			2 0													32	32	0	0.	3	106
107																					1 0				2 2				6	4	2	33.3	3	107
108															2 8				1 0						3 0		1 0		15	7	8	53.3	4	108
109			1 0				2 0	1 0		2 0						20 0													26	26	0	0.	5	109
110							2 0	3 0		2 0	12 0	1 0	1 0			78 1				3 1				4 0	2 2	1 0	1 0		141	133	8	5.7	24	110
111				1 0				6 0								58 1				1 0									69	68	1	1.4	6	111
112																7 1													8	7	1	12.5	1	112
113	3 0							14 1		3 0			3 0		1 0	91 0	1 0			1 0				2 2	2 0				139	130	9	6.5	14	113
114							1 0	1 0								50 0													54	53	1	1.9	4	114
115								4 0		5 0			1 0			12 0		1 0											31	31	0	0.	9	115
116																		14 1											17	16	1	5.9	3	116
117		2 1														9 3	1 0									1 0			23	14	9	39.1	7	117
118		2 1														5 0	0 0												9	8	1	11.1	3	118
119											0 1					1 0	0 1												3	1	2	66.7	3	119
120	13	13												0 1		7 1													76	49	27	35.5	7	120
121	0	6 3	4		1 2								0 1	3 0		91 0	1 0			20 3	3 5			1 0					84	47	37	44.0	15	121
122											2 0					10 2				10 2				1 0		1 0			16	13	3	18.7	3	122
123	5	1 2	0								1 2					14 0				14 0				1 0		1 0			53	43	10	19.0	14	123
124																		1											26	20	6	23.1	8	124
125																								1 1					7	4	3	42.9	5	125
126														1 0						1 1									4	2	2	50.0	3	126
127	1 0	1 0												2 0						10 1					0 1				27	25	2	7.5	8	127
128																					4 2								4	4	0	0.	1	128
129																					2 0								2	2	0	0.	1	129
130																					4 1								5	4	1	20.0	1	130
131																					14 1								15	15	0	0.	2	131
132							2 2																21 1						32	29	3	9.4	4	132
133											3 0													34 2		3 0			42	40	2	4.8	3	133
134											4 1													4 2					6	4	2	33.3	1	134
135																								31 0		3 0			43	42	1	2.3	6	135
136										1 0		1 0															30 5		38	33	5	13.2	4	136
137																											5 0		6	6	0	0.	2	137
138	2 0			1 1			1 0	1 0		3 0						4 0	0 1												25	22	3	12.0	12	138
139										1 0																			1	1	0	0.	1	139
140	0 1	0 2	2	0 1	0		1 1		2 0			2 1	1 0	3 0		0 2				1 0	2 0			0 2	2 0	1 0	0		20	12	7	37.4	28	140
	60	78	182	14	85	2	18	51	7	371	81	14	153	20	24	395	1	41	13	124	7	11	25	105	32	8	54	2	438					
	49	39	145	11	78	5	14	56	5	365	69	13	140	16	9	382	7	20	13	108	6	10	24	87	24	7	48	2	6	178	60			
	11	39	37	3	7	0	4	5	2	6	12	1	13	4	15	13	0	2	0	16	1	1	1	18	8	1	6	0						
	18.3	50.0	20.3	21.4	8.1	0	7.2	2.0	0	1.6	14.8	7.7	2.6	20	62.5	3.3	22.2	29.3	0.	12.9	13.3	9.1	4.0	16.5	28.	12.5	9.3	0.						
	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49					

Marginal Number	NAME OF COLLEGE.	1 Alabama		2 Arizona		3 Arkansas		4 California		5 Colorado		6 Connecticut		7 Delaware		8 District of Columbia		9 Florida		10 Georgia		11 Idaho		12 Illinois		13 Indiana		14 Iowa		15 Kansas		16 Kentucky		17 Louisiana		18 Maine		19 Maryland		20 Massachusetts		21 Michigan		Marginal Number
		P	I	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	I	F	
	ALABAMA.																																								
1	Birmingham Medical College.—R	10	0															1	0																							1
2	University of Alabama, Medical Dept.—R	13	4															1	0															1	0							2
	ARKANSAS.																																							
3	College of Phys. and Surg., Little Rock—R					1	0																																	3
4	University of Arkansas, Medical Dept.—R																																							4
	CALIFORNIA.																																							
5	California Eclectic Medical College.—R							0	3																															5
6	College of Phys. and Surg., Los Angeles.—R			1	1			6	5																															6
7	College of Phys. and Surg., San Fran.—R							7	14																															7
8	Cooper Medical College.—R							27	0																															8
9	Hahnemann Med. Coll. of the Pacific.—H							6	3																															9
10	Oakland College of Med. and Surg.—R							1	0																															10
11	University of California, Med. Dept.—R							15	8																															11
12	University of Southern Cal., Coll of Med.—R			4	0			22	14															1	0															12
	COLORADO.																																							
13	Denver and Gross College of Medicine.—R	1	0			1	0	1	0	21	4																													13
14	Denver Coll. of Phys. and Surg.—P									3	2																													14
15	University of Colorado, Medical Dept.—R									10	0													1	0															15
	CONNECTICUT.																																							
16	Yale Medical School.—R							1	0			21	0																									5	0			16
	DISTRICT OF COLUMBIA.																																							
17	George Washington Univ., Dept. of Med.—R															2	13					0	1	2	1	1	0									5	2	1	1	17
18	Georgetown Univ., School of Medicine.—R			1	0							1	1			7	1																			4	0	2	1	18
19	Howard University, Medical Dept.—R	1	0									1	0			6	6			2	0			1	0											1	2	2	1	19
	GEORGIA.																																							
20	Atlanta Coll. of Phys. and Surg.—R	1	0															4	0	24	0													1	0					20
21	Atlanta School of Medicine.—R	2	5					0	1									6	0	36	4													1	0					21
22	Georgia Coll. of Eclectic Med. and Surg.—E																																							22
23	Medical College of Georgia.—R					0	1											2	0	30	1													0	1					23
	ILLINOIS.																																							
24	American Medical Missionary College.—R													1	0									7	0															24
25	Bennett Coll. of Eclectic Med. and Surg.—E			1	0																			21	4	1	0	1	0							1	1	8	0	25
26	Chicago College of Med. and Surg.—R	1	0																					66	3	4	0	2	0											26
27	College of Medicine and Surg.—Ph. M																							2	2															27
28	College of Physicians and Surgeons.—R					1	0	3	0	0	1							1	0			5	0	101	10	5	0	1	1									1	0	1	0	28
29	Hahnemann Med. Coll. and Hospital.—H	0	1			1	0			0	1											1	1	27	6	3	0	2	1											29
30	Hering Medical College.—H			1	0																			12	1	2	0			1	0									30
31	Illinois Medical College.—R							0	1															16	6	4	0	0	1			1	0					1	0	31
32	Jenner Medical College.—R																					1	0	25	11	0	1													32
33	National Medical University.—P					1	0																	1	0	4	4											1	0			33
34	Northwestern University Med. School.—R			2	0			3	1															1	0	110	1	3	0	2	0									34
35	Rush Medical College.—R							4	1															1	0	57	0	2	0	1	0	1	0							35
	INDIANA.																																							
36	Indiana University, School of Medicine.—R																									74	0													36
37	Physio-Medical College of Ind.—Ph. M																									4	0													37
	IOWA.																																							
38	Drake University, College of Med.—R																											24	5											38
39	Sioux City College of Medicine.—R																											9	1											39
40	State University of Iowa, College of Med.—R							0	1																			43	7											40
41	State Univ. of Iowa, Homeopathic Dept.—H																							1	0			8	1											41
	KANSAS.																																							
42	Kansas Medical College.—R																							1	0					8	3									42
43	University of Kansas, School of Med.—R																													14	0									43
44	Western Eclectic Coll. of Med. and Surg.—E																													10	1									44
	KENTUCKY.																																							
45	Louisville National Med. College.—R					0	1																			1	0					0	3							45
46	Southwestern Homeopathic Med. Coll.—H									1	1																													46
47	University of Louisville, Med. Dept.—R	0				3	0					1	0					2	0	4	1			2	0	11	1	1	0			28	23							47
	LOUISIANA.																																							
48	Flint Medical College.—R																																	8	3					48
49	Tulane University, Medical Dept.—R	1	1	0	3	0								0	3	3	0	2	0															80	1					49
	MAINE.																																							
50	Med. School of Maine, Bowdoin Coll.—R																																			22	2			50
	MARYLAND.																																							
51	Atlantic Medical Colleg.—P																																					13	9			51
52	Baltimore Medical College.—R							0	2			3	2			2	2	0	1	1	0															8	0	19	16	14	15	52
53	College of Phys. and Surg., Baltimore.—R					1	0					1	0					1	0																	3	0	11	6	5	0	53
54	Johns Hopkins Medical School.—R											4	1			0	2	0								1	0	2	0									16	0	3	0	1	0	54
55	Maryland Medical College.—R									1	0	1	2							2	1																	4	11	1	3			55
56	University of Maryland, School of Med.—R									1	0	1	0	2	0			2	0	2	0											1	0	1	0			32	15	2	0	1	0	56
57	Woman's Med. College of Baltimore.—R															1																					3	3					57
	MASSACHUSETTS.																																							
58	Boston University, School of Medicine.—H											1	0																									5	0			58
59	College of Physicians and Surgeons.—R											1	0																									9	5			59
60	Harvard University Medical School.—R							3	0			7	1																									10	16			60
61	Tufts College, Medical School.—R							0	1			4	0																									0	1			61
	MICHIGAN.																																							
62	Detroit College of Medicine.—R			1	0																	0	1																	62
63	Detroit Homeopathic Medical College.—H																							2	0															63
64	Univ. of Mich., Dept. of Med. and Surg.—R																	1	0	1	0			3	0	1	0					2	0					1	0	53	0	64
65	University of Mich., Homeopathic Dept.—H																																	1	0					5	0	65
	MINNESOTA.																																							
66	Univ. of Minn., Coll. of Med. and Surg.—R							0	1													2	0																	66
67	University of Minn., Homeopathic Dept.—H																																							67
68	Minneapolis Coll. of Phys. and Surg.—R																					2	0																	68
	MISSISSIPPI.																																							
69	Mississippi Medical College.—R	0	3															0	1																					69
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21																	

R—Regular; H—Homeopathic; E—Eclectic; P—Panpathic. * One report not received.

| Marginal Number | 22 Minnesota | | 23 Mississippi | | 24 Missouri | | 25 Montana | | 26 Nebraska | | 27 Nevada | | 28 New Hampshire | | 29 New Jersey | | 30 New Mexico | | 31 New York | | 32 North Carolina | | 33 North Dakota | | 34 Ohio | | 35 Oklahoma* | | 36 Oregon | | 37 Pennsylvania | | 38 Rhode Island | | 39 South Carolina | | 40 South Dakota | | 41 Tennessee | | 42 Texas | | 43 Utah | | 44 Vermont | | 45 Virginia | | 46 Washington | | 47 West Virginia | | 48 Wisconsin | | 49 Wyoming | | Totals | Examined—Passed | Examined—Failed | Percentage of Failures | No. States Ex. in | Marginal Number |
|---|---|---

Marginal Number.	NAME OF COLLEGE.	1 Alabama		2 Arizona		3 Arkansas		4 California		5 Colorado		6 Connecticut		7 Delaware		8 District of Columbia		9 Florida		10 Georgia		11 Idaho		12 Illinois		13 Indiana		14 Iowa		15 Kansas		16 Kentucky		17 Louisiana		18 Maine		19 Maryland		20 Massachusetts		21 Michigan		Marginal Number
		I	I	I		F	I	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	
	MISSOURI.																																							
70	American Medical College.—E										1	0																											1	0	70
71	Barnes Medical College.—R			3	0	4	1	0	1													2	3	33	11			1	1	2	0									71
72	Ensworth Medical College.—R					0	1																					0	1	15	5									72
73	Homeopathic Med. College of Missouri.—H																							3	4	2	0													73
74	Kansas City Hahnemann Med. College.—H					1	0																					1	0	6	0									74
75	St. Louis University, School of Med.—R					3	0															1	1	43	1			1	1	1	0									75
76	St. Louis College of Phys. and Surg.—R							0	1	1	0											0	1	17	11	0	1													76
77	University of Missouri, Medical Dept.—R			1	0																					1	0													77
78	University Medical College, Kansas City.—R							1	1	1	0																			36	1									78
79	Washington University, Med. Dept.—R					1	0	0	1									1	0					44	5															79
	NEBRASKA.																																							
80	John A. Creighton Medical College.—R									0	1											0	0	1	0			2	2											80
81	Lincoln Medical College.—E																													2	0									81
82	Nebraska College of Medicine.—R																																							82
83	University of Nebraska, College of Med.—R																																							83
	NEW HAMPSHIRE.																																							
84	Dartmouth Medical School.—R																																	1	0			7	0	1	0	84
	NEW YORK.																																							
85	Albany Medical College.—R																					1	0															1	0		85
86	College of Phys. and Surg., New York.—R									1	0			2	0			1	0	1	0													3	0			2	0		86
87	Cornell University, Medical College.—R													1	0					1	0																	1	0		87
88	Eclectic Med. Coll. of City of New York.—E																																							88
89	Long Island College Hospital.—R									1	0													1	0											0	1	2	0		89
90	New York Homeo. Med. Coll. and Hosp.—H									1	0																											1	0		90
91	N. Y. Med. Coll. and Hosp. for Women.—H																																							91
92	Syracuse University, Coll. of Med.—R											1	0							1	0																			92
93	Univ. and Bellevue Hosp. Med. Coll.—R											3	0													1	0									3	0				93
94	University of Buffalo, Med. Dept.—R																																							94
	NORTH CAROLINA.																																							
95	Leonard School of Medicine.—E	0	1													0	1			6	0													3	0		1	0		95
96	North Carolina Medical College.—R																			1	0																	1	1		96
97	Univ. of North Carolina, Med. Dept.—R																	1	0																					97
	OHIO.																					1	0																	
98	Cleveland College of Phys. and Surg.—R																																							98
99	Cleveland Homeo. Medical College.—H																																							99
100	Eclectic Medical Institute.—E											0	1											1	0	5	0					3	1						0	1	100
101	Medical College of Ohio.—R																									2	0					3	0							101
102	Miami Medical College.—R							2	2																	2	0					1	0							102
103	Pulte Medical College.—H																															1	0							103
104	Starling-Ohio Medical College.—R																																							104
105	Toledo Medical College.—R																																							105
106	Western Reserve Univ. Med. Dept.—R																									1	0									1	0			106
	OREGON.																																							
107	Willamette Univ., Medical Dept.—R				1	0																																	107
108	University of Oregon, Medical Dept.—R																							1	0															108
	PENNSYLVANIA.																																							
109	Hahnemann Med. Coll. and Hospital.—H											1	0	1	0													2	0			1	0							109
110	Jefferson Medical College.—R	1	0	2	0	1	0	5	0			2	1	1	0	0	2	1	0			1	0	4	0	1	0			2	0			1	0	3	0	6	2	5	1	110
111	Medico-Chirurgical Coll. of Philadelphia.—R							1	2									1	0			1	0	1	0	1	0							1	0	1	0		1	0	111
112	Temple College, Med. Dept.—R																																							112
113	University of Penn., Dept. of Medicine.—R							1	1					1	0	1	0					1	0	1	0			1	0	2	0					8	0			113
114	Western Pennsylvania Med. College.—R											0	1											2	0															114
115	Woman's Med. Coll. of Pennsylvania.—R															1	0															1	0			2	0	5	0	3	0	115
	SOUTH CAROLINA.																																							
116	Med. Coll of the State of So. Carolina.—R																	4	0	1	0																			116
	TENNESSEE.																																							
117	Chattanooga Medical College.—R	0	4			0	1											2	0	3	0																			117
118	College of Phys. and Surg., Memphis.—R																			2	0																			118
119	Knoxville Medical College.—R																																							119
120	Memphis Hospital Medical College.—R	3	5			5	1											0	1													16	4							120
121	Meharry Medical College.—R	1	4			3	8											1	2	10	0			0	1					2	4	2	2							121
122	Tennessee Medical College.—R																	1	0																					122
123	University of Nashville, Med. Dept.—R	3	5			2	0											3	0	4	0									1	0	0	1	9	1					123
124	University of Tennessee, Dept. of Med.—R	2	3	0	1	1	0											1	0	2	0											1	1	1	0					124
125	University of the South, Med. Dept.—R	1	1			1	0																																	125
126	University of West Tenn., Med. Dept.—R					0	1													0	1																			126
127	Vanderbilt University, Med. Dept.—R	0	1			3	0																									3	0			1	0			127
	TEXAS.																																							
128	Baylor University, College of Med.—R																																							128
129	Fort Worth University, Med. Dept.—R																																							129
130	Southwestern University Med. Coll.—R																																							130
131	University of Texas, Dept. of Med.—R																																							131
	VERMONT.																																							
132	University of Vermont, Coll. of Med.—R									0	1																									3	0		7	2		132
	VIRGINIA.																																							
133	Medical College of Virginia.—R																																	0	1							133
134	University of Virginia, Dept. of Med.—R	1	0	1	0													1	0			1	0											1	0							134
135	University Coll. of Medicine.—R													2	0			1	0	1	0																	0	1			135
	WISCONSIN.																																							
136	Marquette University, Med. Dept.—R																							1	0															136
137	Wisconsin College of Phys. and Surg.—R																																							137
138	Canadian Colleges				1	0			1	0	1	0	1	0	1	0						2	0	1	0	1	0	2	0					11	0		4	6	1	0	138
139	Foreign																					1	0	6	0													0	1			139
140	Miscellaneous Medical Colleges																																							140
	Totals by States	21		24		65		184		50		70		8		79		61		155		44		705		178		179		111		165		159		109		201		272		109
	Totals—Examined—Passed	54		22		44		115		48		66		8		49		53		143		36		622		163		130		106		100		138		90		130		211		104
	Totals—Examined—Failed	37		2		21		69		11		10		0		30		8		12		8		83		7		49		13		59		21		10		71		61		5
	Percentage of Failures	40.7		8.3		32.3		37.5		18.6		14.3		0.		38.0		13.1		7.7		18.2		11.8		4.1		27.7		10.9		35.8		13.2		10.0		35.3		22.4		4.6
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21	

Marginal Number	22 Minnesota	23 Mississippi	24 Missouri	25 Montana	26 Nebraska	27 Nevada	28 New Hampshire	29 New Jersey	30 New Mexico	31 New York	32 North Carolina	33 North Dakota	34 Ohio	35 Oklahoma*	36 Oregon	37 Pennsylvania	38 Rhode Island	39 South Carolina	40 South Dakota	41 Tennessee	42 Texas	43 Utah	44 Vermont	45 Virginia	46 Washington	47 West Virginia	48 Wisconsin	49 Wyoming	Totals examined—Passed	Totals examined—Failed	Percentage of Failures		Marginal Number
	F P	F P	F P	F P	F P	F P	F P	F P	F P	F P	F P	F P	F P	F P	F P	F P	F P	F P	F P	F P	F P	F P	F P	F P	F P	F P	F P	F P					
70			6																										10	8	2	20.0	3	70
71	1 0		5 3	1 0	0 1				1 0					1 1	2			0 1	12 0	2 0				2 0		1 1			95	68	27	28.4	29	71
72			7 3		1 0																								33	23	10	30.3	5	72
73			4 3																										16	9	7	43.8	3	73
74			4 2																										15	13	2	13.3	5	74
75		3 1	7 3	3 1								1 0												1 2					100	87	13	13.0	11	75
76									1 0						0 1	1 1								1 0		1 0			64	36	28	43.7	15	76
77			10 0						1 0															1 0					13	13	0	0.	4	77
78			24 7	6 1										1 0										1 0					75	65	10	13.3	8	78
79			42 5	9 1										1 0							0			2 1					105	92	13	12.4	9	79
80			0 1	2 1	34 6				1 0						1 0						1 1						1 0	61	49	12	19.7	11	80
81			0 1		13 1														2 0										19	17	2	10.5	4	81
82					2 2																								4	2	2	50.0	1	82
83					25 0							1 0																	20	20	0	0.	2	83
84							4					1 1																	15	14	1	6.7	5	84
85										42 0				1 0															45	45	0	0.	4	85
86	1 0				1 0			3 0		88 0					1 0	1 0								1 0					110	107	3	2.7	14	86
87	1 0							1 0		61 0					1 0		1 0												68	68	0	0.	8	87
88										7 0																			7	7	0	0.	1	88
89								5 1		86 4																			102	96	6	5.9	7	89
90										21 0																			23	23	0	0.	3	90
91										3 0																			3	3	0	0.	1	91
92										38 0																			40	40	0	0.	3	92
93								3 0		75 0																			91	89	2	2.2	7	93
94										46 0																			47	47	0	0.	2	94
95	3 1									15 3						5 1	0 1	3 5					5 10		3 0				67	44	23	34.3	12	95
96										5 4											1 0								13	8	5	38.4	4	96
97										13 1																			15	14	1	6.7	2	97
98							1 0			1 0			18 0			1 0			1 0										23	23	0	0.	6	98
99										7 0	3 1		7 0	1 1		4 0													13	12	1	7.7	3	99
100										2 0			6 3			3 0		1 0						1 0	2 0				30	24	6	20.0	11	100
101				1 0								1 0	23 0											1 0	3 1				35	34	1	2.9	7	101
102				1 0									14 1											1 0	1 1				27	23	4	14.8	8	102
103													1 0												1 0				1	0	1	0.	1	103
104												1 0	30 0		0 1	1 0									1 0				34	33	1	2.9	5	104
105													3 0											1 0					4	4	0	0.	2	105
106				1 0									29 0			2 0													34	34	0	0.	5	106
107														1 1							1 0			4 2					20	7	13	65.0	4	107
108														5 1					1 0					4 0				1 0	24	12	11	47.8	5	108
109	1 0							2 0		3 0						22 1								1 0	1 0				36	35	1	2.8	10	109
110				1 0			2 0	10 0		7 1	13 0	2 0	6 0	1 0	1 1	96 1					1 0	0 1		6 0	5 3	2 0	1 0		209	196	13	6.2	32	110
111								6 0		3 1						63 2	1 0								3 1				91	85	6	6.6	14	111
112																8 1													9	8	1	11.1	1	112
113	3 0		1 0	1 0			1 0	19 0		11 0	2 0		4 0		2 0	104 0	3 0						1 0	4 0	3 0				176	153	23	13.1	23	113
114								1 0								53 14									2 0	1 0			74	59	15	20.3	6	114
115			1 0				1 0	7 0		5 0			1 0			16 0		1 0								1 0			45	45	0	0.	13	115
116																	17 2												24	22	2	8.3	3	116
117	2 1										0 1								10 9	2 1					1 1				38	20	18	47.3	9	117
118	3 2										0 1								6 0										13	11	2	15.4	3	118
119																			2 2	0 1									6	2	4	66.7	3	119
120	17 19								1 0										13 2	5 3									94	60	34	36.2	9	120
121	0 1	3 1									0 1		0 1						28 9	4 5				2 1					125	62	63	50.4	17	121
122	1 2								0 1		0 2		0 1						11 3					2 2					23	17	6	26.1	4	122
123	9 5	3 0							0 1		0 2		0 2						19 0	5 1				1 0		1 0			81	66	15	18.5	17	123
124											0 3		0 3						14 5	1 1									39	25	14	35.9	11	124
125	2 2										1 0		0 1						11 1	3 1				2 0					41	22	19	46.3	14	125
126																			3 2										8	4	4	50.0	4	126
127	1 0	1 0														1 2			10 0					1 1					33	28	2	6.7	9	127
128																				8 0									8	8	0	0.	1	128
129																													3	3	0	0.	1	129
130																				5 1									6	5	1	16.7	1	130
131									1 0												21									24	24	0	0	4	131
132							3 3	1 0		3 0				1 0	0 1														60	52	8	13.3	11	132
133											3 0			1 0								31 1			2 0	1 0			50	45	5	10.0	6	133
134	1 0			2 0				1 0					1 0										36 4		1 0			20	22	4	15.4	14	134
135											1 0	4 2					1 0						32 0		3 0				48	45	3	6.3	9	135
136											1 0		1 0											1 0		33 5			42	37	5	11.9	5	136
137																										9 0			11	10	1	9.1	3	137
138	5 2				5 1	1 1		3 2	0	14 1		3 1	1 0						1 0				2 2		1 0			101	82	19	18.8	25	138
139	1 0					1 0		0 2	0	25 1		1 0	0 1	1 1		3 0	1 0				1 0		1 0	2 0					85	47	38	44.7	15	139
140	1 2	0 5	2 0	1 0	1 1			0 1	0	1 0	1 0	5 3	1 0	5 1	0 1	3 2	0 3			1 0			2 0	3 0					344	21	13	7.		140
	98	128	228	5	107	2	9	51	9	21	671	111	54	176	9	70	51	37	0	56	18	121	30	45	157	160	114	72	6	47	.	.	.	
	74	69	170	44	90	9	35	8	15	627	89	45	170	24	2	466	23	46	41	146	102	27	41	117	130	98	67	6	.	328	.	.	.	
	24	68	48	13	15	0	16	8	2	44	22	9	6	19	0	48	14	20	4	3	15	5	4	40	30	16	7	0	.	.	15	.	.	
	24.5	53.1	21.4	22.8	14.3	0.	31.4	8.7	9.7	6.6	19.8	16.7	3.4	19.	0	9.3	37.8	30.3	8.9	3.9	13.7	16.7	8.9	25.5	18.8	14.	9.5	8.	.	.	.	7.5	.	
	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49					

Marginal Number	NAME OF COLLEGE.	1 Alabama		2 Arizona		3 Arkansas		4 California		5 Colorado		6 Connecticut		7 Delaware		8 District of Columbia		9 Florida		10 Georgia		11 Idaho		12 Illinois		13 Indiana		14 Iowa		15 Kansas		16 Kentucky		17 Louisiana		18 Maine		19 Maryland		20 Massachusetts		21 Michigan		Marginal Number
		I	F	F	F	F	F	P	F	P	F	F	F	F	F	P	F	P	F	F	F	P	F	F	F	I	F	F	F	F	F	I	F	F	F	F	F	F	F	
	ALABAMA.																																							
1	Birmingham Medical College.—R																																							1
2	University of Alabama, Medical Dept.—R	0	1																																					2
	ARKANSAS.																																							
3	Coll. of Phys. and Surg., Little Rock.—R																																							3
4	University of Arkansas, Medical Dept.—R																																							4
	CALIFORNIA.																																							
5	California Eclectic Med. Coll.—E							1	0																															5
6	Coll. of Phys. and Surg., Los Angeles.—R																																							6
7	Coll. of Phys. and Surg., San Francisco.—R							1	2																															7
8	Cooper Medical College.—R																																							8
9	Hahnemann Med. Coll. of the Pacific.—H																																							9
10	Oakland Coll. of Med. and Surg.—R																																							10
11	University of California, Med. Dept.—R																																							11
12	Univ. of Southern Cal., Coll. of Med.—R							1	1																															12
	COLORADO.																																							
13	Denver and Gross College of Medicine.—R																																							13
14	Denver Coll. of Phys. and Surg.—P																																							14
15	University of Colorado, Medical Dept.—R																					1	0																	15
	CONNECTICUT.																																							
16	Yale Medical School.—R																																					1	0	16
	DISTRICT OF COLUMBIA.																																							
17	George Washington Univ., Dept. of Med.—R																																							17
18	Georgetown Univ., School of Medicine.—R							1	0															1	0															18
19	Howard University, Medical Dept.—R							0	1															0	1															19
	GEORGIA.																																							
20	Atlanta Coll. of Phys. and Surg.—R																																	1	0					20
21	Atlanta School of Medicine.—R	0	1																																					21
22	Georgia Coll. of Eclectic Med. and Surg.—E																	0	1																					22
23	Medical College of Georgia.—R																	1	0																					23
	ILLINOIS.																																							
24	American Medical Missionary Coll.—R																	2	0					1	0			1	0									1	0	24
25	Bennett Coll. of Eclectic Med. and Surg.—E																					0	1																	25
26	Chicago Coll. of Med. and Surg.—R																																							26
27	College of Med. and Surg.—Ph.M																																							27
28	College of Physicians and Surgeons—R					1	0	1	0			0	1					1	0			0	2	0															28
29	Hahnemann Med. Coll. and Hospital.—H			1	0	1	0																	0	1													0	1	1	0	29
30	Hering Medical College.—H																																							30
31	Illinois Medical College.—R																	1	0																					31
32	Jenner Medical College.—R																																							32
33	National Medical University																																							33
34	Northwestern University Med. School.—R																					2	0	1	0													1	0	34
35	Rush Medical College.—R			1	0	1	0	2	1									1	0			3	0	0	0	1	2	0										1	0	35
	INDIANA.																																							
36	Indiana University, School of Med.—R																																							36
37	Physio-Medical Coll. of Ind.—Ph.M							0	1																															37
	IOWA.																																							
38	Drake University, Coll. of Med.—R																																							38
39	Sioux City Coll. of Medicine.—R			1	0																																			39
40	State Univ. of Iowa, Coll. of Med.—R							0	2																															40
41	State Univ. of Iowa, Homeopathic Dept.—H																																							41
	KANSAS.																																							
42	Kansas Medical College.—R							1	0													1	0																	42
43	University of Kansas, School of Med.—R							1	0																															43
44	Western Eclectic Coll. of Med. and Surg.—E																																							44
	KENTUCKY.																																							
45	Louisville National Med. Coll.—R																																							45
46	Southwestern Homeopathic Coll.—H																																							46
47	University of Louisville, Medical Dept.—R							0																0	1	1	0					0	1							47
	LOUISIANA.																																							
48	Flint Medical College.—R																	1	0															0	2					48
49	Tulane University, Medical Dept.—R							1	0																									3	1					49
	MAINE.																																							
50	Medical School of Maine, Bowdoin Coll.—R							1	0																															50
	MARYLAND.																																							
51	Atlantic Medical College.—P																																							51
52	Baltimore Medical College.—R																			1	0																	0	1		52
53	Coll. of Phys. and Surg., Baltimore.—R			1	0			1	0													1	1															1	0	53
54	Johns Hopkins Medical School.—R																																							54
55	Maryland Medical College.—R																																							55
56	University of Maryland, School of Med.—R											2	0	1	0																							1	0	56
57	Woman's Med. Coll. of Baltimore.—R																																							57
	MASSACHUSETTS.																																							
58	Boston University, School of Medicine.—H											1	0																											58
59	College of Physicians and Surgeons.—R																																							59
60	Harvard Medical School.—R															1	0					2	0	1	0													1	0	60
61	Tufts College Medical School.—R															0	1																					1	0	61
	MICHIGAN.																																							
62	Detroit College of Medicine.—R		0					1	0									1	0					1	0														1	0	62
63	Detroit Homeopathic College.—H																																							63
64	Univ. of Mich., Dept. of Med. and Surg.—R			1	0													1	0			1	0															1	0	64
65	Univ. of Mich., Homeopathic Dept.—H																							1	1													1	0	65
	MINNESOTA.																																							
66	Univ. of Minn., Coll. of Med. and Surg.—R																																					1	0	66
67	Univ. of Minnesota, Homeopathic Dept.—H																																							67
68	Minneapolis Coll. of Phys. and Surg.—R																																							68
	MISSISSIPPI.																																							
69	Mississippi Medical College.—R																																							69
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21	

R—Regular; H—Homeopathic; E—Eclectic; P—Panpathic; • One report not received.

22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	Totals					
Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma*	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Ex. in	Marginal Number	
P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F						
																				1 0			1 0					3	2	1	33.3	3	1
																																	2
																				2 1								3	2	1	33.3	1	3
																																	4
																												1	1	0	0.	1	5
																																	6
																							1 0					5	3	40.0	3	7
					1 0																							1	1	0	0.	1	8
					1 0																												9
																																	10
																							1 0					1	1	0	0.	1	11
																												2	1	1	50.0	1	12
																																	13
																																	14
																												2	2	0	0.	2	15
									2 0																								16
																												2	2	0	0.	2	
																																	17
																		1 0										3	3	0	0.	3	18
																												2	0	2	100.0	2	19
																																	20
										0 1										1 0								5	3	2	40.0	4	20
																												1	0	1	100.0	1	21
																								1 0				1	0	1	100.0	1	22
																												4	3	1	25.0	3	23
																																	24
													1 0															7	6	1	14.3	6	24
			0 1						0 1														0 1			1 0		5	1	4	80.0	5	25
																																	26
				2										1 1																			27
1 0									0 1					1 0										3 0	1 0			20	13	7	35.0	12	28
			0 1						1 0																	1 0		9	7	2	22.2	9	29
			1 0						0 2																								30
																												4	1	3	75.0	3	31
																												1	1	0	0.	1	32
																							0 1					1	0	1	100.0	1	33
																										1 0		0	0	0	0.	0	34
		1 0	0 2	1 0							1 0			2 0				4 1			1 0		4 2			4 0	0 1	29	31	8	20.6	19	35
																																	36
																												1	0	1	100.0	1	37
																																	38
														1 0														0	0	0	0.		39
																												5	3	2	40.0	4	40
																			1 0	1 0				1 0									41
													1 0	0 1														4	3	1	25.0	4	42
																												1	1	0	0.	1	43
																																	44
																																	45
																																	46
													0 1	1 1							1 0			0 1				2	3	2	66.7	8	47
																												3	1	2	66.7	2	48
	1 1																						1 0		1 0			13	11	2	15.4	7	49
															1 0													2	2	0	0.	2	50
																																	51
								1 0	1 0	1 0					1 1								0 1	1 0				10	7	3	30.0	8	52
									1 0	0 1				1 1				1 1	1 1				0 1	1 0				14	10	4	28.6	11	53
																								1 0				1	1	0	0.		54
			0 1																		1 0							2	1	1	50.0	2	55
							1 0	0 1	2 0	1 0			1 0		1 0	1 0												13	13	0	0.	11	56
																																	57
									1 0																			2	2	0	0.	2	58
									0 1																			2	0	2	100.0	1	59
					1 0				3 0				1 0			1 0												13	13	0	0.	9	60
																									1 0			5	4	1	20.0	4	61
														1 0										1 0				7	7	0	0.	7	62
																																	63
				1 1				0 1										1 0								1 0		18	11	7	38.9	10	64
												1 0																4	2	2	50.0	3	65
																		1 0										4	4	0	0.	4	66
																																	67
				0 1						1 0								1 0										3	2	1	33.3	3	68
																																	69
22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49						

Marginal Number	NAME OF COLLEGE.	1 Alabama	2 Arizona	3 Arkansas	4 California	5 Colorado	6 Connecticut	7 Delaware	8 District of Columbia	9 Florida	10 Georgia	11 Idaho	12 Illinois	13 Indiana	14 Iowa	15 Kansas	16 Kentucky	17 Louisiana	18 Maine	19 Maryland	20 Massachusetts	21 Michigan	Marginal Number
		I S	I S	I S	I F P	I F P	I F P	I F P	I F P	I F P	I F P	I F P	I F P	I F P	I F P	I F P	I F P	I F P	I F P	I F P	I F P	I F P	
	MISSOURI.																						
70	American Medical College.—E		1 0																				70
71	Barnes Medical College.—R			1 0		1 0						0 1				1 0				0 1			71
72	Ensworth Medical College.—R																						72
73	Homeopathic Med. Coll. of Missouri.—H												0 1			1 0							73
74	Kansas City Hahnemann Med. Coll.—H																						74
75	St. Louis University, School of Med.—R																						75
76	St. Louis Coll. of Phys. and Surg.—R		1 0	1 0		0 1							0 1										76
77	University of Missouri, Medical Dept.—R				1 0																		77
78	University Medical Coll., Kansas City.—R			1 0												1 0							78
79	Washington University, Medical Dept.—R			1 0																			79
	NEBRASKA.																						
80	John A. Creighton Med. Coll.—R																						80
81	Lincoln Medical College.—E					1 0																	81
82	Nebraska College of Medicine.—R																						82
83	University of Nebraska, Coll. of Med.—R																						83
	NEW HAMPSHIRE.																						
84	Dartmouth Medical School.—R						0 1			1 0			1 0		0			0 1		1 0			84
	NEW YORK.																						
85	Albany Medical College.—R																						85
86	College of Phys. and Surg., New York.—R				2 0		1			1 0											1 0		86
87	Cornell Univ. Medical College.—R																						87
88	Eclectic Med. Coll. of City of New York.—E																						88
89	Long Island College Hospital.—R											0 1											89
90	New York Homeo. Med. Coll. and Hosp.—H				1 0																1 0		90
91	N. Y. Med. Coll. and Hosp. for Women.—H																						91
92	Syracuse University, Coll. of Med.—R																						92
93	Univ. and Bellevue Hosp. Med. Coll.—R												1 0								1 0		93
94	University of Buffalo, Medical Dept.—R									1 0													94
	NORTH CAROLINA.																						
95	Leonard School of Medicine.—E																						95
96	North Carolina Med. Coll.—R																						96
97	Univ. of North Carolina, Med. Dept.—R																						97
	OHIO.																						
98	Cleveland Coll. of Phys. and Surgs.—R						1 0																98
99	Cleveland Homeo. Med. Coll.—H																				1 0		99
100	Eclectic Medical Institute.—E				1 0																		100
101	Medical College of Ohio.—R				0 1					1 0		0 1	1 0										101
102	Miami Medical College.—R									1 0				1 0									102
103	Pulte Medical College.—H	1 1											1 0										103
104	Starling–Ohio Medical College.—R																						104
105	Toledo Medical College.—R				0 1																		105
106	Western Reserve Univ., Med. Dept.—R																						106
	OREGON.																						
107	Willamette Univ., Medical Dept.—R																						107
108	University of Oregon, Medical Dept.—R																						108
	PENNSYLVANIA.																						
109	Hahnemann Med. Coll. and Hospital.—H																			1 0			109
110	Jefferson Medical College.—R	1 0		1 2			1 0	0 1					1 0	1 0							2 1	2 0	110
111	Medico-Chirurgical Coll. of Philadelphia.—R																						111
112	Temple College, Med. Dept.—R																						112
113	University of Penn., Dept. of Medicine.—R	1 0		5 0									1 0							1 0	1 0		113
114	Western Pennsylvania Med. Coll.—R										1 0												114
115	Woman's Med. Coll. of Pennsylvania.—R											1 0									1 0		115
	SOUTH CAROLINA.																						
116	Med. Coll. of the State of So. Carolina.—R										1 0												116
	TENNESSEE.																						
117	Chattanooga Medical College.—R										3 0							1 0					117
118	Coll. of Phys. and Surg., Memphis.—R																						118
119	Knoxville Medical College.—R																						119
120	Memphis Hospital Medical College.—R	1 0									1 0							0 2					120
121	Meharry Medical College.—R												0 1	0 1									121
122	Tennessee Medical College.—R																						122
123	University of Nashville, Med. Dept.—R																						123
124	University of Tennessee, Dept. of Med.—R																						124
125	University of the South, Med. Dept.—R							1 0															125
126	University of West Tenn., Med. Dept.—R																						126
127	Vanderbilt University, Med. Dept.—R																	1 0					127
	TEXAS.																						
128	Baylor University, Coll. of Med.—R																						128
129	Fort Worth University, Med. Dept.—R		0 1																				129
130	Southwestern Univ. Med. Dept.—R																						130
131	University of Texas, Dept. of Med.—R				1 0																		131
	VERMONT.																						
132	University of Vermont, Coll. of Med.—R						1 0														1 2		132
	VIRGINIA.																						
133	Medical Coll. of Virginia.—R																						133
134	University of Virginia, Dept. of Med.—R																						134
135	University Coll. of Medicine.—R																						135
	WISCONSIN.																						
136	Marquette University, Med. Dept.—R																						136
137	Wisconsin Coll. of Phys. and Surg.—R																						137
138	Canadian Colleges		1 0		1 2		0 1			1 0						1 0			2 0		2 1		138
139	Foreign	1 0	3 0	1 0	2 8	1 2	1 1			4 6			0 1	1 0	1 0	1 1	0 1	1 0		0 1	3 6		139
140	Miscellaneous Medical Colleges				1 0		0 1			4 7	1 1	1 0	5 1	8 5	2 0	0 5	2		1 2	0 1	1 2	1 1	140
	Totals by States	5	10	10	57	7	13	3	10	28	8	24	37	9	4	14	3	15	3	2	37	10	
	Totals—Examined—Passed	3	14	9	39	4	7	3	4	20	7	16	24	9	3	10	1	7	2	2	22	1	
	Totals—Examined—Failed	2	2	1	27	3	6	0	6	2	1	8	13	0	1	4	2	8	1	0	15	1	
	Percentage of Failures	40.0	12.5	10.0	47.4	42.9	46.2	0.	60.0	7.1	12.5	33.3	35.1	0.	50.0	28.6	66.7	53.3	33.3	0.	40.5	10.0	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	

| Marginal Number | 22 Minnesota | | 23 Mississippi | | 24 Missouri | | 25 Montana | | 26 Nebraska | | 27 Nevada | | 28 New Hampshire | | 29 New Jersey | | 30 New Mexico | | 31 New York | | 32 North Carolina | | 33 North Dakota | | 34 Ohio | | 35 Oklahoma | | 36 Oregon | | 37 Pennsylvania | | 38 Rhode Island | | 39 South Carolina | | 40 South Dakota | | 41 Tennessee | | 42 Texas | | 43 Utah | | 44 Vermont | | 45 Virginia | | 46 Washington | | 47 West Virginia | | 48 Wisconsin | | 49 Wyoming | | Totals | Examined—Passed | Examined—Failed | Percentage of Failures | No. States Ex. in | Marginal Number |
|---|---|---

Medicolegal

Effect of Injury on Capacity to Bear Children Proper for Consideration

The Second Appelate Division of the Supreme Court of New York holds, in the personal injury case of Devine vs. Brooklyn Heights Railroad Company, that evidence that the plaintiff's capacity to conceive would continue but that she would continually suffer the discomfort and pain of miscarriages, was competent on the question of damages, regardless of the question by which it came in, or of whether it cropped out. It is true, the court says, that the evidence could not be used as a basis for damages for pecuniary loss resulting from deprivation of future offspring, but it could be used as a basis for damages for pain and suffering, and was therefore material and relevant.

If the defendant's counsel feared that the jury might also make use of it to speculate as to how much pecuniary loss the plaintiff would suffer by having no more children to grow up and support and enrich her (after the manner in actions by next kin for deaths by negligence), it was for him to request the trial judge to charge the jury that such damages were not allowable.

It would not do to distort the charge of the trial judge on that head (to which there was no exception), namely, that the plaintiff was entitled to recover reasonable compensation for her pain and suffering, for the deprivation of her natural powers, for the loss of health which was due to this accident, if it was due to it. To say that she was entitled to damage "for the deprivation of her natural powers" was strictly correct, even if limited to a particular delicate meaning, which was not the case. That is true in the case of man or woman. But that is far from even intimating that damages may be given for pecuniary loss resulting from deprivation of future children.

Finally, it may be worth while to point out that the question itself was proper, namely, "What effect does it (the injury) have on her capacity to bear children?" It was just as proper as to ask what effect an injury has on the function, use or capacity of the arm, leg or stomach. The capacity may be made laborious, or painful, or destroyed. The degree of injury is competent to be shown. If the plaintiff were still able to conceive and bear children with regularity and certainty that would be evidence that her womb was not much injured or weakened, and that she could not do so would be evidence strong, corroborative evidence—that the physical condition testified to actually existed, namely, that the womb was retroverted and its ligaments greatly weakened.

Adulteration of Coffee with Lead Chromate

The United States District Court for the middle district of Tennessee, in the case of United States vs. 84 Sacks of Coffee, that coffee colored and coated with lead chromate, a poisonous and deleterious substance, whereby inferiority is concealed and the coffee rendered injurious to health, is adulterated within the meaning of the act of Congress generally known as the Food and Drugs Act of June 30, 1906, and that the coffee of that character seized should be destroyed by being burned.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

May 8

1 Ephraim McDowell, L. S. McMurtry, Louisville, Ky.
2 Pellagra. J. J. Watson, Columbia, S. C.
3 *Value of the Roentgen Rays in Thoracic Lesions. R. H. Boggs, Pittsburg, Pa.
4 Operation for Frontal Sinus Obliteration Avoiding Supra-orbital Deformity and Nasal Scar. A. E. Prince, Springfield, Ill.

3. **Roentgen Rays in Thoracic Lesions.**—Boggs says that out of a series of more than eighty patients whom he has examined for pulmonary tuberculosis, in whom the diagnosis has been confirmed either before or afterward by other methods, he feels justified in summarizing the following points:

1. The extent of the disease is more accurately determined by the *x*-ray than by the physical findings alone.
2. In doubtful cases the rays often afford sufficient information to make an accurate diagnosis.
3. The rays are a useful method of recording the lesions and of determining the progress made by treatment.
4. The radiogram records nothing but variations in density and leaves the etiologic factors to be determined by other clinical methods.
5. Frequently, when physical signs were present in one side, the radiogram would show infiltration in both lungs.

The Roentgen rays afford also a valuable method of diagnosticating mediastinal tumors.

Medical Record, New York

May 8

5 *Point of View in Medicine. R. Robinson, New York.
6 Re-educational Treatment of Locomotor Ataxia. J. R. Jacoby, New York.
7 Plea for the Establishment of Hospitals for the Rational Treatment of Inebriates. C. A. Rosenwasser, Newark, N. J.
8 Examination of the Lungs by Roentgen Rays. H. Hulst, Grand Rapids, Mich.
9 *Relation Between Aneurism of the Aorta and Tabes Dorsalis. P. H. Bikle, Philadelphia.
10 Eczema. S. Stern, New York.
11 *Cancer Treated with Trypsin. F. B. Golley, Milwaukee.
12 Wholesale Baby Washer. W. P. Northrup.

5. **Point of View in Medicine.**—Robinson cites instances to show the importance of keeping laboratory methods subservient to older and more reliable clinical methods. He insists on the importance of the art of medicine, which can not be based solely on the knowledge of the dead house or laboratory. In our efforts to get rid of tuberculosis, so praiseworthy and encouraging, we must not insist on foolish rules of prevention or cure, thus becoming absolutely cruel to those who most need our sympathy and support. He quotes the admirable counsels in this respect of the Massachusetts State Board of Health. He discusses alcoholism and prostitution, the relation of the general practitioner to the consultant, and the importance of trying to relieve symptoms of disease carefully and intelligently.

9. **Aneurism of the Aorta and Tabes Dorsalis.**—Biklé discusses the question whether the concurrence of these two affections in the same patient—which Lesser has shown to occur in approximately 20 per cent. of the cases of tabes dorsalis—is merely a coincidence, or whether we shall find in such cases tabes itself or a toxin peculiar to the two conditions to be the underlying cause of aneurism. There can be no doubt, he says, that syphilis is one of the most frequent causes of aneurism of the aorta as well as of tabes. He is inclined to believe that the association between the two diseases is merely accidental, and that in such cases each is a parasyphilitic disease independent of the other.

11. **Cancer Treated with Trypsin.**—Golley makes a further report on the two cases of cancer, formerly reported by him, in which the patients were treated with injections of trypsin. The first patient is in fairly good health and considers herself cured, although he suspects that she will have trouble in the future. At present she is free from pain, the surfaces are all healed and she is about her duties as though perfectly well. He describes the condition of the second patient from the fall of 1906 to the summer of 1908, when she died. Up to the last there was marked influence over the general physical condition whenever trypsin was used. The case was one of cancer of the large bowel. Three important points are, that it never became necessary to establish an artificial anus; that the disease changed from an active and rapidly progressive type to a slow and almost stationary one, not only prolonging life, but making it more bearable and wholesome by the formation of membrane over the raw surfaces; and that trypsin appears to exert some influence on the metabolic processes particularly, and to establish a resistance to the cell activity of malignancy.

Boston Medical and Surgical Journal

May 6

13 *Results of Operations for Cancer of the Tongue, Mouth and Jaw at the Massachusetts General Hospital, 1850, 1904. R. B. Greenough, C. C. Simmons, and R. M. Green, Boston.
14 Random Medical Notes of Travel. G. C. Shattuck, Boston.

15 Intermittent Hydronephrosis. Report of Four Cases (continued). D. F. Jones, Boston.
16 *Circulation of the Lobar Ganglia. J. B. Ayer, and H. F. Aitken, Boston.

13. **Cancer of Tongue, Mouth and Jaw.**—Greenough, Simmons and Green conclude their analysis as follows:

1. One hundred and seventy-two cases of cancer of the tongue, mouth and jaw appear in the records of the Massachusetts General Hospital in the years 1890-1904 inclusive. Of this number 112 patients were operated on, 50 were judged inoperable, and 10 refused operation.

2. Of the 112 operations of all varieties, 20 resulted in death within 60 days (17.8 per cent.).

3. Of cancer of the tongue and floor of mouth, there were 98 cases of which 62 patients were operated on and 36 cases were inoperable or the patients refused operation. Of the 62 patients operated on, in 58 (93.5 per cent.) the end-result is known; 62 cases of operation gave an operative mortality of 8, or 12.9 per cent. Of the 58 cases in which the end-result is known, 10 patients were free from recurrence 3 years or more after operation (17.2 per cent.). Of the 40 cases in which recurrence did take place after operation, in 38 death occurred before the lapse of 3 years after operation. Operations for cancer of the tongue involving section or resection of the jaw caused a much higher operative mortality and no greater percentage of cures than the intrabuccal operations.

4. Of cancer of the lower jaw, there were 40 cases: 28 operable, 12 inoperable. The operative mortality of 28 cases was 10, or 35.5 per cent. In 26 cases of operation the end-result is known, and in 5 cases (19.2 per cent.) the patients were free from recurrence 3 years or more after operation.

5. There were 14 cases of cancer of the upper jaw; 10 patients were operated on and 4 were not. The end-result is known in 9 of the 11 patients operated on, and in each of these 9, death occurred within 3 years, although there were no deaths as an immediate result of operation.

6. Cancer of the tonsil, soft palate, or fauces occurred in 11 cases, 8 of which were inoperable and 4 were submitted to operation. One patient was alive and well 7 years after operation (25 per cent.). There was no operative mortality.

7. Cancer of the cheek occurred in 9 cases, 1 of which was inoperable. Of the 8 patients operated on, 2 died of operation (25 per cent.) and none was cured.

8. For reporting statistics of the end-results of operations for cancer, a standard should be established, requiring the publication of reports of all consecutive cases entered in the hospital records. For the acceptance of percentages of cures pathologic proof of the existence of carcinoma should be presented, and no case should be considered in which the patient has not survived the arbitrary 3 year period.

16. **Circulation of the Lobar Ganglia.**—This is a supplement, consisting mainly of half-tone illustrations. Ayer's and Aitken's findings endorse those of Heubner concerning the anatomy of the circulation of the lobar ganglia—a point of great importance in regard to cerebral hemorrhage—which are at variance with those of Duret at present generally accepted. The essential differences from Duret's teaching are, that the present findings show that the middle cerebral artery has not plainly the predominant share in the circulation of this region; that the caliber of the anterior cerebral artery is not insignificant, but is equal to that of the middle cerebral artery; and that the posterior cerebral artery is not more important than the anterior cerebral artery. Further, the lenticulo-optic artery of Duret has not been found in either side of 45 brains (Heubner does not mention it after dissecting 30 brains). The choroid artery supplies the posterior third of the putamen slightly, the globus pallidus, and the inner part of the internal capsule.

Lancet-Clinic, Cincinnati

May 1

17 *Surgery of Venereal Diseases of the Rectum. G. B. Evans, Dayton, O.
18 Diagnosis of Diseases of the Accessory Sinuses of the Nose. W. E. Murphy, Cincinnati.
19 Improved Method for Preparation of Glycerin-Jelly for Macroscopic Specimens. G. I. Hogue, Milwaukee.

17. Abstracted in THE JOURNAL, Nov. 21, 1908, p. 1806.

Medical Fortnightly, St. Louis

April 26

20 *Suggestion Concerning the Increased Longevity of Life-Insurance and Policy Holders. B. Foster, St. Paul.
21 Sudden Blindness. P. I. Leonard, St. Joseph, Mo.
22 Neuritis. W. F. Waugh, Chicago.
23 Food Preservatives. H. L. Harris, New York.

May 10

24 Touring the Lands where Medical Science Evolved, Iberia and Lusitania. R. G. Eccles, Brooklyn, N. Y.
25 Removal of an Infrathoracic Osteosarcoma Involving Five Ribs. J. F. Menestrina, St. Louis.
26 Stenosis of the Esophagus. J. M. Bell, St. Joseph.
27 Surgical Eponyms. M. Hagen, Chicago.

20. Discussed editorially in THE JOURNAL, May 1, 1909, p. 1428.

Northwestern Lancet, Minneapolis

May 1

28 Conservatism in Traumatic Surgery. W. Courtney, Brainard, Minn.
29 Heredity. E. L. Murdy, Aberdeen, S. D.
30 Tuberculin Treatment of Tuberculous Glands of the Neck. M. M. Ghent, St. Paul.
31 Results of Pneumonia, Empyema, and Rib Resection. E. H. Fayley, Lake City, Minn.
32 *Diphtheria Involvement or Contamination of Wounds. E. L. Tuohy, Duluth.
33 Case of Foreign Body in the Trachea. D. W. Rudgers, Yankton, S. D.

32. **Wound Diphtheria.**—Tuohy reports two cases of wounds which have become infected with the diphtheria bacillus. One case was that of a finger, infected in the lumber woods, which had been opened and dressed, but refused to heal. When seen three months later, there was tremendous induration in the axilla, with three sinuses. Actinomycosis was suspected, but pure cultures of the diphtheria bacillus were found on examination. Antitoxin treatment resulted in cure. The second case was a suppurative bunion that had been opened and drained. This also became chronic. When seen one month later investigation here also showed pure cultures of the diphtheria bacillus. A cure was effected in this case too by antitoxin injection. It was found that diphtheria cases were being treated in the town and in the hospital from which these men came at the time they were first under treatment. Tuohy suggests that cases of similarly persistent wounds that defy healing without any obvious cause after incision and drainage and under appropriate treatment, should be examined for the diphtheria bacillus, and if this is found, a prompt cure can be promised almost with certainty.

Virginia Medical Semi-Monthly, Richmond

April 9

34 *Typhoid Fever Diet. E. W. Robertson, Onancock, Va.
35 Surgical Treatment of Hemorrhoids. L. Eliot, Washington, D. C.
36 Tuberculin in Incipient and Concealed Tuberculosis. M. D. Hoge, Richmond.
37 Empyema of the Maxillary Sinus. C. P. Jones, Newport News, Va.
38 Some of the Difficulties in the Application of Eugenics to the Human Race. G. F. Lydston, Chicago.
39 Abdominal Gun-shot Wound with Intestinal Perforations, with Special Reference to the After-treatment with "Saline Drip." T. Maddox, Union, S. C.

34. **Typhoid Diet.**—Robertson summarizes the views of 13 prominent clinicians in reply to his inquiries practicallly as follows: The majority of his correspondents advocate liquids, milk and eggs as the chief dietary. One disapproves of milk on the ground of its causing tympany; but the majority of patients taking that diet with impunity as against the minority is obvious. The precautionary measure cited is to discontinue the milk in case of curds, tympany, etc., but until these symptoms arise, so long as the patient is doing well and is nourished, it is useless to ignore such a valuable food stuff. Robertson supposes it could be shown that almost any other of the generally advocated foods listed could cause, seemingly, a disagreement with the digestion. Broths might act as a culture medium, eggs are regarded as suspicious sometimes, and we are advised to cut off nearly everything in tympany, etc. Even water is possibly taken to excess at times. He knows of but two guiding lines in typhoid fever diet, and they are, to nourish the patient and to have respect for the local conditions in the digestive tract. Finally, he believes that he would be safe in advancing this proposition: Give the patient a sensible nurse and an obtusely bent glass feeding tube, and tell the nurse to give the patient anything that may be easily taken through it; and if curds (when milk is the staple diet) occur, to cut off milk, using in its stead whey with essence of pepsin; or, to give even water only for a few days, should tympany, etc., arise. His correspondents show all these points.

Kentucky Medical Journal, Bowling Green

May 1

40 Bacteriology of Typhoid Fever. A Historical Review. J. W. Kincaid, Catlettsburg.
41 The Physician and Nostrums. W. C. Herman, Cincinnati, O.
42 Scarlet Fever. T. A. Frazer, Marion.
43 Some Cases I have Lost. U. L. Taylor, Columbia.
44 Some Things the General Practitioner Should Know About the Eye. W. R. Burr, Auburn.
45 Glaucoma. J. W. Conklin, Leitchfield.
46 Pneumonia. A. M. Zaring, Smithfield.
47 Treatment of Lobar Pneumonia. E. D. Turner, Sorgho.

48 Pneumonia. L. D. F. Whitaker, Maxwell.
49 Mistakes and Blunders of a Doctor. B. A. Caudle, Hopkinsville.
50 Colles' Fracture. C. A. Vance, Lexington.
51 Tuberculosis. W. L. Nuttall, New Castle.
52 The Choice of an Anesthetic. W. H. Smith, Danville.
53 Idem. S. Iglauer, Cincinnati, O.
54 Serotherapy. B. S. Rutherford, Bowling Green.
55 Placenta Praevia. J. H. Parker, Corbin.
56 Pulmonary Emphysema and its Relation to Tuberculosis. F. W. Lee, Olmstead.
57 Needs of the Medical Profession. B. F. Fyke, Springfield, Tenn.

Archives of Internal Medicine, Chicago

April

58 *Sarcosporidiosis. S. T. Darling, Ancon, Canal Zone.
59 Purpura Fulminans. C. A. Elliott, Chicago.
60 *Value of the Measurements of Chest Expansion and Lung Capacity. H.W. Goodall, and J. L. Belknap, Boston.
61 *Distribution of Tuberculous Lesions in Infants and Young Children. M. Wollstein, New York.
62 *Primary Portal Thrombosis. D. D. Lewis and E. C. Rosenow, Chicago.
63 Antitryptic Content of the Blood Serum in Malignant Disease. M. E. Roche, Baltimore.
64 Method for Estimating Blood Flow in the Arm. A. W. Hewlett, and J. G. Van Zwaluwenburg, Ann Arbor.
65 Primary Pulmonary Arteriosclerosis with Hypertrophy of the Right Ventricle. W. E. Sanders, Alta, Iowa.
66 Demonstration of the *Trichinella Spiralis* in the Circulating Blood in Man. W. W. Herrick, and T. C. Janeway, New York.
67 Meningococcus Septicemia, with Sterile Cerebrospinal Fluid; Iridocyclitis; Flexner's Serum; Recovery. D. Bovaird, Jr., New York.

58. **Sarcosporidiosis.**—Darling reports a case of sarcosporidiosis occurring in a negro who passed through an attack of typhoid accompanied with necrosis and myositis of some muscles. Sarcosporidiosis in man is probably extremely rare and doubtless represents a chance infection, by one of the sarcosporidia whose customary habitat is one of the domestic animals. The author differentiates the sporozoon from that described by Baraban and St. Remy. These infections appear to give rise to little or no discomfort and the clinical conditions found are mainly attributed to the typhoid.

60. **Measurement of Chest Expansion.**—Goodall and Belknap arrive at the following conclusions:

The measure of chest expansion has no constant direct relation to the lung capacity, and by itself is of comparatively little value as one of the methods of physical examination. Large measures only indicate good development of the muscles which expand the chest. Owing to individual variations, normal standards can not be adopted. It is probable, however, that an expansion of from 2 to 2.5 inches will permit the maximum capacity under ordinary conditions of health.

In normal individuals the measure of lung capacity varies directly with the muscular development, provided the individual breathes properly. Erroneous conclusions may be drawn from spirometer readings unless special attention is given to the method of breathing. Capacities of 190 cubic inches, and possibly less, are consistent with normal lungs.

With both measurements large values only indicate good muscular development. Low values indicate inferior muscular development or improper breathing.

In suspected pulmonary disease, very little, if any, additional aid in diagnosis is obtained by these measurements. The only positive value of the measurements is the aid in determining whether or not the person is breathing properly, and whether or not the muscles of respiration are properly developed.

61. **Tuberculous Lesions in Infants.**—Wollstein summarizes her paper practically as follows:

Of 185 cases showing tuberculosis at autopsy there were 13 in which the tuberculous lesions were limited to the respiratory tract, and only 1 involving the intestines alone. The point of entrance for the tubercle bacillus in these 14 cases was clearly in the lungs 13 times and in the intestinal tract once.

In the majority of cases of extensive or generalized tuberculosis in young children the exact point of entrance must remain in doubt. Although the lungs were involved more frequently than any other organ (in 96 per cent. of all cases), this proves their marked predisposition to tuberculosis rather than their primary infection.

This study shows how comparatively rare undoubted cases of intestinal tuberculosis were in this series of infants and children under 3 years of age, and how, even when due allowance has been made for all doubtful cases, tuberculosis of respiratory origin predominated over that due to ingestion of the bacillus in these subjects.

62. **Primary Portal Thrombosis.**—Lewis and Rosenow report a case, summarize the twenty cases from the literature, discuss the symptoms, diagnosis and treatment and draw the following conclusions:

1. A careful bacteriologic examination of the blood, using media which favor the growth of the highly parasitic bacteria, will establish the etiologic rôle that bacteria play in portal thrombosis.

2. It is impossible to differentiate between thrombosis of the mesenteric arteries and veins, but a probable diagnosis of circulatory ileus can be made if the history reveals some previous illness that is frequently associated with inflammatory changes in the arteries and veins.

3. The procedure to be adopted depends altogether on the conditions revealed by the exploratory operation. A record of four recoveries in twenty-one cases in which operation was performed, indicates that surgical intervention is not futile.

United States Naval Bulletin, Washington, D. C.

April

68 Treatment of Tuberculosis and the Results Observed During the Year 1908. B. L. Wright, U. S. Navy.
69 Laboratory Studies and Observations During 1908. A. B. Clifford, U. S. Navy.
70 Tenaillar Hypertrophy; A Menace to the Service. B. F. Jenness, U. S. Navy.
71 *The Ice-Bag in the Treatment of Typhoid Fever. G. T. Smith, U. S. Navy.
72 *Treatment of Typhoid Fever by Colon Irrigations. C. G. Alderman, U. S. Navy.

71. **The Ice-Bag in Typhoid.**—Smith speaks highly of a large abdominal ice-bag covering the whole area below the umbilicus and kept there constantly until the temperature falls to normal. A towel is used beneath the bag. The effect was markedly beneficial, no baths or spongings were required, no tympanites occurred, and there was no delirium or hemorrhage from the bowels.

72. **Colon Irrigations in Typhoid.**—Alderman reports the successful result in an epidemic of typhoid at the United States Naval Hospital, Las Animas, of a treatment previously unsuccessfully tried and discarded. If the patient is seen before the eighth day he is purged freely with calomel, 3 grains, sodium bicarbonate 5 grains, followed in three hours by half an ounce of magnesium sulphate. If seen after the eighth day the physician must exercise his judgment as to whether purging is safe. A low enema is given when a bowel movement is pending, and, immediately following, a high enema at 85 F. to flush the colon—between 1 and 2 quarts. Both enemas are of plain water. The next two enemas are to be given at a temperature of 80 F. and dropping to 70 F., at which temperature they will be continued. They are given at three-hour intervals so long as the temperature is above 100.6 F. Milk from 5 to 6 ounces is given every three hours with lime water; also all the water the patient wants to drink. Neither diarrhea nor constipation is a contraindication. He discusses the rationale of the process, and says that it is not plain that this treatment reduces the temperature after each enema, as baths do, but the fastigium is lower; and if any symptoms of septic absorption are present they are scarcely noticeable. No delirium is seen, nor is there the anxious look, the dull heavy eye, the muscular twitching, etc. The patient complains of no headache or other pain, has a bright appearance, and there is little or no tympany. The patient actually loses the so-called typhoid facies which every physician is accustomed to see.

Philippine Journal of Science, Manila

December

73 *Streptothricosis, with Special Reference to the Etiology and Classification of Mycetoma. W. E. Musgrave, M. T. Clegg, and M. Polk, Manila.
74 Trichocephaliasis. W. E. Musgrave, M. T. Clegg, and M. Polk, Manila.

73. **Streptothricosis.**—Musgrave, Clegg and Polk remark on the confusion in nomenclature resulting from the transition from a clinical picture to an etiologic diagnosis, and to the discovery that to the same organism that produces madura foot, lesions in the other parts of the body are found also to be due. They discuss the different methods of classification adopted by botanists, describe animal experiments, and review the literature of the subject with the following resulting conclusions:

There is in human pathology, a very important group of branching, filamentous micro-organisms which logically belong to a single genus. The generic name is variously given as *Streptothrix, Actinomyces, or Nocardia*; the last of these names is probably scientifically the most correct, but because of the present botanical confusion and uncertainty the first is here employed, because of its more general acceptance.

The following species, to judge from our work and from a study of the literature, are the most important and may be recognized as established. There are probably a number of others but the descriptions of many of them are too imperfect to allow of their recognition: *Streptothrix actinomyces*, Bostroem, 1890; *Streptothrix actinomyces*, Wolff and Israel, 1891, and Wright, 1905; *Streptothrix nocardia*; *Streptothrix maduræ*, Vincent; *Streptothrix capræ*, Silberschmidt.

The disease caused by infection with these parasites is properly named streptothricosis, with actinomycosis and nocardiosis as synonyms. Other names, such as lumpy jaw, madura foot and mycetoma, should be considered more as describing anatomic location,

rather than as designations relating to any special or specific cause of infection. Mycetoma might well be taken as the correct name for the group of infections if a strict interpretation of rules of nomenclature is followed, but usage renders it perhaps more desirable to retain the name as representing *Streptothricosis pedis*. If mycetoma is to be considered in any more comprehensive light than this, it should become another synonym for streptothricosis. It should not be considered a disease caused by organisms other than *Streptothrix*.

They then discuss streptothricosis (synonyms: actinomycosis, nocardiosis), which they define as an infectious disease of man and animals caused by one or more species of *Streptothrix*. They tabulate their experiments. As to treatment, potassium iodid in large doses over a long period is generally admitted to have a favorable influence on the course of the disease, and complete cures have been reported; locally, antiseptic dressings and the Roentgen ray, surgical measures, drainage, removal or amputation were employed, according to the locality and extent of the lesion. A combination of all these forms would seem to promise the most favorable opportunity for recovery.

Chicago Medical Recorder

April

75 *Advantages and Disadvantages of Cooperation and Business Partnership Among Medical Men. C. A. Wood, Chicago.
76 *Question of Division of Fees From the Surgeon's Standpoint. J. F. Percy, Galesburg, Ill.
77 Therapeutic Use of Solidified Carbon Dioxid. W. A. Pusey, Chicago.
78 *Renal Calculi. D. N. Eisendrath, Chicago.
79 *Thermic Crises in Locomotor Ataxia, with Report of a Case. G. Campbell, St. Louis.
80 *Rôle of the Free Dispensary in the General Crusade Against Tuberculosis. S. Klein, Chicago.
81 Unique Foreign Body in the Male Bladder and Removal by Suprapubic Cystotomy. H. O. White, and R. R. Duff, Chicago.
82 Papilloma of the Larynx with Extralaryngeal Operation. D. A. Vanderhoof, Rockford, Ill.
83 Are there Evil Effects from the Removal of the Faucial Tonsils? J. E. Rhodes, Chicago.

75, 76. Abstracted in Department of Medical Economics, THE JOURNAL, May 15, 1909.

78. Published also in *Southern Medical Journal*, February, 1909. This paper appears to be in the main identical with that read before the Western Surgical and Gynecological Association and abstracted in THE JOURNAL, Jan. 30, 1909, p. 413.

79. **Thermic Crises in Locomotor Ataxia.**—Campbell gives the history of a case supposed originally to be one of malaria, in which hard chill, followed by high fever, and later by sweating occurred at intervals; the highest temperature point recorded was 106.6 F. A striking feature was the lack of constitutional symptoms one would expect as an accompaniment of so high a body temperature. While Campbell can not assert positively that the high temperature attacks observed in his patient were tabetic crises, the facts that lead him to present them as probably of such a nature are:

1. Absence of any evidence of the usual causes that produce fever, either at the time of the attacks or after the attacks subsided; it appears very improbable that any of the usual causes apt to produce fever could produce such high temperature several times and yet leave the temperature as the only evidence of their presence.
2. The sharply paroxysmal nature of the temperature disturbance.
3. The fact that such occurrences, while very unusual, have been reported in the past.

80. **The Free Tuberculous Dispensary.**—Klein assigns the following as the functions of the tuberculous dispensary: To care for ambulatory cases, to refer incipient cases to sanatoria, to watch and supervise patients discharged from sanatoria, to examine other members of the family, to disseminate information, and to aid the health department. He discusses each of these points.

Wisconsin Medical Journal, Milwaukee

April

84 Partial Report of the Epidemic of Acute Anterior Poliomyelitis in Wisconsin During 1907-1908. J. Manning, Eau Claire.
85 Medical, Ethical and Forensic Aspects of Fatal Criminal Abortion. W. Becker, Milwaukee.
86 Surgical Treatment of Chronic Lachrymal Disease, with Report of Cases of Extirpation of the Lachrymal Sac. G. E. Seaman, Milwaukee.
87 Anaphylaxis. K. W. Smith, Madison.
88 *After-Care of Obstetric Cases in a Country Practice. M. V. de Wire, Sharon.

88. Abstracted in THE JOURNAL, Aug. 8, 1908, p. 523.

Buffalo Medical Journal

May

89 Improved Medical Course. I. N. Snively, Philadelphia.
90 Case of Pneumopericardium. J. Burke, Buffalo.

Journal Abnormal Psychology, Boston

April-May

91 Mechanism of Amnesia. I. H. Coriat, Boston.
92 *Rôle of Sensations and Feelings under Ether. C. H. Johnston, Ann Arbor.
93 Importance for Research and Treatment of Distinguishing Clinical Types Among the Psychoneuroses. T. A. Williams, Washington, D. C.
94 *The Unconscious (concluded). M. Prince, Boston.

92. **Sensations and Feelings Under Anesthetics.**—Johnston gives a study of the sensations and feelings under ether in the case of two brothers, which lead him to the conclusion that the data in hand are insufficient to enable one unprovisionally to conclude anything definite concerning the fundamental psychologic problem as to what is the most serviceable conception of the relationship of sensation and feeling or affection. The special sense organs become inactive long before general consciousness is lost. Vision and audition cease before touch and sense of position. A feeling (anguish or anger, etc.) is the most persistent mental state. In the process of gradual recovery of normal consciousness feeling is first reinstated. Purely intellectual activity, without images, is next in order. Vague tactual sensations, pressure, and sense of position return before sight and hearing. All these, together with partial restoration of inhibitory power, are not sufficient to enable one, however, to feel normal, to be an inhibiting individual, or to grasp one's characteristic relation to one's environment. Physical pain seems to be here one of the necessary mental conditions for this self realization. Due chiefly to this intense mental activity, sleep is induced with great difficulty. Finally there seems to be some evidence, from this "feeling one's self as a disembodied spirit," from this conviction that all sensation is for the time localized in the head, and from the absolute loss of all inhibitory power and of the experience of pain, that there may be such a physiologic situation in which some so-called higher centers work independently, paralleled by vivid, if not constructive, imageless, intellectual activities. In short, this field would seem to be a fruitful one for further and more comprehensive psychologic, as well as strictly neurologic, investigations. Such possible results might nicely supplement other at present more systematically directed methods into these as yet unexplained phenomena.

Legitimately, it seems, we may be inclined to justify the position of those psychologists, at present in the minority, who claim that there is no inseparable connection of sensation with feeling-tone.

94. **The Unconscious.**—Prince concludes his analysis of the unconscious by a consideration of the evidence from dormant complexes which never form a part of the experiences of the personal self inasmuch as they originated in dissociated states, such as hypnosis, alternating personalities, dreams, trance and other hysterical conditions, etc. The origin and even the existence of such complexes is necessarily unknown to the personal self. In the psychologic results of suggestion given in hypnosis, known as posthypnotic phenomena, we have perfect examples, not only of the experimental formation of dormant complexes, but of the influences of these complexes on the personal consciousness, and we can study the mechanism of this influence, which has not hitherto received the attention it deserves. In it, too, we can study the psychologic principle of psychotherapeutics; for every therapeutic suggestion given in hypnosis, if successful, clearly becomes a posthypnotic phenomenon. Taking the facts of experimental investigation as data, Prince suggests three methods by which dormant hypnotic complexes affect the personal consciousness and, in fact, the whole personality: 1. Through the formation of co-conscious ideas. 2. Through the persistence of the emotions created in hypnosis. Although the ideas giving rise to them disappear, the prevailing feelings, whether joyous or depressing, aroused in hypnosis remain,

wherefore it is important to take care before a subject is allowed to wake, that depressing ideas are removed and those with a healthy, invigorating, emotional tone implanted. The power of emotion in invigorating or depressing all vital processes according to its character is well known. Moreover, the persistence of the emotional tone after the rest of the complex becomes dormant is not peculiar to posthypnotic phenomena, but is observed in every-day life. The difference between them is that in one case we can, if we will, and in the other we can not recall the origin of the feeling, but in either case we do not. Dormant dream complexes may give rise to similar phenomena. 3. Suggestion in hypnosis gives rise to fixed ideas, which persist after waking as organized unconscious complexes. Then, as a result of stimulation by associated ideas from the environment acting as *points de repère*, these complexes become conscious again and interwoven with, and substituted for, the ideas which happen to be in the personal consciousness at any given moment. He discusses this subject at some length.

Louisville Monthly Journal of Medicine and Surgery

May

95 Ischemic Paralysis of Volkman's Contracture. W. O. Roberts, Louisville.
96 Prostatism. L. Frank, Louisville.
97 Physicians of Clark County, Ind. D. L. Field, Jeffersonville, Ind.

Archives of Diagnosis, New York

April

98 *Diagnosis of Intestinal Autointoxication. J. M. Anders, Philadelphia.
99 *Diagnosis of Smallpox. J. M. Armstrong, St. Paul.
100 *Diagnosis of Fibroid Degeneration of the Appendix. R. T. Morris, New York.
101 Differential Diagnosis in Cases of Appendicitis. J. J. McGrath, New York.
102 Errors in Abdominal Diagnosis. A. J. Walschied, Union, N. J.
103 *Early Allusion to Accurate Methods of Diagnosis. J. J. Walsh, New York.
104 *Significance of the Red Ring when Examining Urine by Nitric Acid Contact Test. R. H. M. Dawbarn, New York.
105 The Acetone Bodies in the Urine and the Ferric Chlorid Reaction. H. Stern, New York.
106 Multiple Sclerosis. Its Occurrence in Families. T. H. Welsenburg, Philadelphia.
107 Subdural Abscess Followed by Internal Hydrocephalus of Traumatic Origin. A. Gordon, Philadelphia.
108 *Acute Ascending Lethal Paralysis After Antirabic Treatment. J. R. Fabricius, New York.
109 Plastic Radiography. G. M. McKee, New York.

98. **Intestinal Autointoxication.**—Anders says that the disease is often attributable, not so much to microbic action as to the products of intestinal fermentation. There are three main factors: (1) Ingestion of excessive albuminous food; (2) certain intestinal lesions, including defective motility; (3) abnormalities of metabolism. From personal observation, Anders is also convinced that fat and sugar, taken in quantities above the physiologic capacity of the organism, are responsible in certain cases. When the eliminative processes are defective a marked predisposition to the condition exists. Cases should be subdivided etiologically into gastric and intestinal forms of chronic autointoxication. The great majority of cases, however, are of intestinal origin. He discusses the symptomatology and says that his personal experience indicates an increase in the elimination of indican in practically all cases. He has further demonstrated the fact to his own satisfaction, that indican is increased most decidedly in the cases showing marked residual accumulation throughout the colon. This urinary constituent, therefore, is of the utmost importance for both diagnosis and prognosis, and chemical examination of the urine. The microscopic urinary findings are unimportant. He has observed marked acetonuria in the preponderating proportion of his cases of intestinal origin. The nervous system, more particularly the vasomotor tract, is decidedly affected by the irritant autotoxins. It is exceedingly important, however, to distinguish between nervous disturbances induced by the absorbed toxic substances and those resulting from primary changes in the neuromechanism of the body. The diagnosis of this condition should always be made with caution and reserve. It is not permissible to regard the given case as one of chronic alimentary intoxication, retrospectively, merely because the symptoms have disappeared as the result of an eliminative plan of treatment, since this method also serves other disposing and exciting causes. In connection with the principal causative factors—notably impaired metabolism, dietetic errors, and certain pathologic conditions of the intestinal tract, e. g., mucous colitis and chronic appendicitis—the following symptom group would suffice for an assured diagnosis: Heavily coated tongue, fetor of breath, indications of Rigg's disease, headache at intervals, insomnia, marked constipation, evidence of fecal accumulation in the colon, the elimination of an increased amount of indican and the frequent presence of acetonuria. Though experimental evidence may be wanting to show that the development of gout, arteriosclerosis, nephritis, and other forms of degeneration is, in some instances at least, dependent on autointoxication, clinical experience and observation lend striking confirmation to this view.

99. **Smallpox.**—Armstrong states that the diagnosis of this disease must often rest wholly on the objective lesions of the skin.

1. Except in rare instances, and only in the presence of an epidemic, is the positive diagnosis of smallpox justified before the appearance of the skin lesions.
2. The history of pre-eruptive illness serves only to confirm the diagnosis as made by the senses of sight and touch.
3. The smallpox papule has characteristics which make a positive diagnosis possible within a few hours of its appearance.
4. The papules appear first on the exposed parts, particularly the forehead and flexor surfaces of the wrists. They are under the epidermis, hard, round, flat-topped, umbilicated, rose-pink, and waxy in appearance. All these characteristics are usually present.
5. In general, the entire course of evolution of the lesion from papule, vesicle, pustule, to scab formation is regular and characteristic.
6. The lesions vary in number. They may be few, or so numerous as to become confluent, but the individual characters of the lesion are present in all cases.

100. **Fibroid Degeneration of the Appendix.**—Morris gives the following as the salient diagnostic point in cases of fibroid degeneration of the appendix in the following order of importance:

1. Hypersensitiveness at the site of the right group of lumbar ganglia.
2. Distention of the cecum and ascending colon as far as the hepatic flexure, and this distended part of the bowel is filled with gas.
3. More or less persistent discomfort at the site of the appendix.
4. The presence of an intractable intestinal dyspepsia for which no other cause has been found.
5. Lastly, palpation of the appendix in many cases will bring out clear evidence of a small, hard, fibrous appendix.

103. **Medieval Laboratory Diagnosis.**—Walsh cites some interesting passages from the works of Cardinal Nicholas of Cusa, who lived in the middle of the fifteenth century, to show that he recommended the estimation of the pulse, and of the respirations by the clepsydra, or water clock, and also the application of the method of specific gravity to the urine and possibly the blood.

104. **The Red Ring in Heller's Test.**—Dawbarn calls attention to a diagnostic sign sometimes found in the urine. On contact with cold nitric acid, with or without the presence of the white line of coagulated albumin, there is to be seen, and far from rarely, a red line of varying width. It is never so sharply defined at its points of contact with the acid below, and the urine above, as is the line of albumin, but it is to be recognized with the utmost ease. When albumin is also present the red line in question will be found just above the albumin.

108. **Acute Ascending Paralysis Following Antirabic Treatment.**—Fabricius reports a fatal case of acute ascending paralysis following antirabic injections subsequent to the bite of a dog. Examination showed the dog not to have had rabies, and it is concluded that there was a causative relationship between the antirabic treatment and the disease.

Ophthalmic Record, Chicago

April

110 Herpes Zoster Frontalis Associated with Glaucoma. A. A. Bradburne, Southport, Eng.
111 Modification of Buller's Shield. B. J. Knapp, Evansville, Ind.
112 Improvement on the Cross-Cylinder. J. N. Rhoades, Philadelphia.

Archives of Ophthalmology, New York

May

113 Incision of the Eye, Especially Incisions for Extraction of Cataract and Relief of Glaucoma. W. E. McKechnie, Jullunder, Punjab, India.
114 Original and Absolutely Reliable Suture for Tucking or Shortening an Ocular Muscle. G. A. Suffa, Boston.

115 Congenital Connective Tissue Formation in the Vitreous, Probably Arising from the Optic Nerve. H. F. Hansell, Philadelphia.
116 Formation of Pupillary Membranes after Cataract Extraction. E. S. Thomson, New York.
117 Operative Treatment of Separation of the Retina. Reports of Cases Treated by Scleral Puncture. E. K. Ellis, Boston.
118 Scleral Collapse During Cataract Operation. J. S. Fernández, Havana, Cuba.
119 Paralysis of the Inferior Oblique Muscle of the Left Eye. M. Cohen, New York.

Montreal Medical Journal

April

120 *Pathology and Treatment of Diabetes Mellitus, Viewed by the Light of Present-Day Knowledge (concluded). F. W. Pavy, London, Eng.
121 *Anterior Metatarsalgia. A. M. Forbes, Montreal.
122 Diphtheritic Paralysis. A. H. Gordon, Montreal.
123 *Pathologic Discovery and Its Bearing on Preventive Medicine. J. G. Adami, Montreal.
124 Surgical Tuberculosis. E. M. von Eberts, Montreal.
125 *Organized Pleural Adhesions and Their Relationship to Tuberculosis, Based on an Analysis of 1,374 Consecutive Autopsies. A. R. Landry, and J. G. Adami, Montreal.

120. Published in the *Lancet*, Dec. 12, 1908.

121. **Anterior Metatarsalgia.**—Forbes discusses the literature and the history of this subject. Its causation he divides into general and specific. The general causes are general debility and excessive body weight in proportion to the strength of the foot. The specific causes are: 1. The use of too short or too narrow a boot causing extension of the proximal phalanges with flexion of the distal phalanges. This results in a depression of the arch as is clearly demonstrated in casts of feet in this condition. 2. The use of a boot with too high a heel throwing the body weight on the anterior arch. 3. The use of a boot with too thin a sole, which insufficiently protects the anterior arch. The symptoms are as follows:

1. Pain—either of a constant character or spasmodic, as described by Morton.
2. Tenderness—found on pressure from beneath over the heads of one or more metatarsal bones, or on lateral pressure in the region of the metatarso-phalangeal joint.
3. Swelling and edema—may be so severe as to simulate gigantism, erythromelalgia or acromegaly.
4. Extension of phalanges—often postural and accompanied by flexion of middle and distal phalanges. This may simulate deformities following anterior poliomyelitis.
5. Muscular spasm—usually of extensors of toes. It is reflex in nature and causes a deformity resembling the conditions in No. 4.
6. Callosities on sole—frequent, and adding to the pain of a mild case.

The diagnosis of anterior metatarsalgia requires its differentiation from: (1) The chronically strained posterior arch; (2) tuberculosis of the tarsus, rheumatism, the so-called rheumatoid disease, and gout; (3) gigantism, erythromelalgia or acromegaly; (4) postural deformities, and (5) deformities resulting from the paralyses. The treatment naturally resolves itself into (1) protection against lateral pressure, and (2) the elevation or support of a depressed arch, with suitable protection of the plantar surfaces of the heads of the bones. The elevation of the forepart of the foot is also of importance. Operative treatment, as suggested by Morton, should be applied only in those chronic or resistant cases in which conservative treatment has failed. In certain cases characterized by great spasm of the extensors, causing extension of the toes, the transference of the attachment of these tendons to the dorsal aspect of the heads of the metatarsals may be considered.

123. Published in the *New York Medical Journal*, March 20, 1909; abstracted in THE JOURNAL, April 3, 1909, p. 1140.

125. Abstracted in THE JOURNAL, Oct. 24, 1908, p. 1449.

Maryland Medical Journal, Baltimore

May

126 *The Faculty and its Library. A. K. Bond, Baltimore.
127 Intestinal Obstruction. J. C. Bloodgood, Baltimore.
128 Cingulus Gaitii. H. M. Cohen, Baltimore.
129 Hemiplegia as a Complication of Typhoid. J. B. Piggott, Baltimore.

126. Commented on editorially in THE JOURNAL, May 15, 1909, p. 1586.

Yale Medical Journal, New Haven, Conn.

April

130 Modern Treatment of Syphilis. R. A. McDonnell, New Haven.
131 Diagnosis of Diseases Affecting the Pylorus, Duodenum and Bile Passages. L. M. Gompertz, New Haven.
132 *Retinal Hemorrhages and Arterial Hypertension. E. M. Blake, New Haven.

132. **Retinal Hemorrhages.**—Blake says that the frequent association of retinal hemorrhages with disorders of the circulatory system emphasizes the close relationship between ophthalmology and internal medicine. The significance of a retinal hemorrhage extends beyond the disturbance of vision produced to some profound disturbance of the bodily function. The earliest definite signs which allow one to diagnose sclerosis are three: First, the corkscrew appearance of the small twigs at the macula and periphery; second, flattening of the veins by the arteries; and third, the dull red congestion of the nerve head. This last sign is thought by Reber to indicate a more advanced stage of the process. Retinal hemorrhage may be grouped into four types: (1) simple hemorrhage into the fiber layer of the retina; (2) hemorrhagic retinitis, that is, hemorrhage with some edema and exudates in the retina; (3) subhyaloid, a hemorrhage between the retina and the hyaloid membrane covering the vitreous; and (4) vitreous hemorrhage, an extravasation sufficient to burst into the vitreous humor. If a patient in middle life comes complaining of a blur of sudden onset, he should not be told that it is a trifling affair which will pass off, but a careful fundus examination should be made, best with a dilated pupil. If a little extravasation of blood or any evidence of vascular changes be found, which often can be detected in no other way in the early stage, the case should be thoroughly studied by the internist. The examination of the urine, blood, and especially blood pressure, which is so easily determined, may point to the necessity for medication and changes in the life habits which may spare the patient serious accidents and give him many years of life.

Detroit Medical Journal

April

133 Atypical Graves' Disease. C. G. Jennings, Detroit, Mich.
134 *Surgical Treatment of Genital Hernia. W. P. Manton, Detroit.
135 Mechanical Symptoms Produced by Enlarged Thyroid. A. Mc Lean, Detroit.
136 Practice of Medicine. F. B. Tibbals, Detroit.

134. **Genital Hernia.**—After reviewing the history of the development of the surgical treatment of genital hernia and the operations used or suggested at the present time, Manton says that in all these operations we must depend largely on individual experience, rather than on accumulated hospital statistics; for, until a common standard of observation can be formulated, if such is possible, surgeons will differ in their opinions according to individual interpretation either of their own work or another's work.

St. Louis Medical Review

April

137 *Suggested Treatment of Leukemia Based on Clinical Observation and Animal Experiment. L. K. Baldauf, St. Louis.
138 *Danger of Laboratory Diagnosis. D. L. Harris, St. Louis.
139 *Interrelations of the Medical and Legal Professions. F. R. Fry, St. Louis.
140 Mild Myxedema of Long Duration. W. H. Rush, St. Louis.
141 Carcinoma of the Rectum. C. H. Dixon, St. Louis.

137. **Treatment of Leukemia.**—Baldauf suggests the injection of bacterial toxins in the treatment of leukemia. He bases his suggestion on certain observations of Dock and Longcope. The author's results in myelogenous leukemia, although not entirely satisfactory, give him reason to hope for much more from selected and more favorable cases with the use of Coley's fluid.

138. **Laboratory Diagnosis.**—Harris says that while the value of a laboratory report depends on the skill, experience, and intelligence of the laboratory worker, no amount of skill on his part will compensate for carelessness or ignorance on the part of the physician who secures the material. The laboratory report should be valued as only one link in a chain of evidence. A simple negative report is valueless unless it coincides with all the clinical manifestations. The microscopist should never be permitted to make the diagnosis; neither should he be expected to relieve the physician of the necessity of a thorough clinical study of the case.

139. **Interrelations Between Medical and Legal Professions.**—Fry points out the essentially different viewpoints in law and medicine, when it comes to the question of adjusting the rights and privileges of individuals and of society. He in-

stances the efforts to deal with the expert testimony question, and cites Godkin's remark, "the trouble with most of them is that they contravene one or all of the three fundamental ideas of our system of criminal trial, to-wit, that the judge alone is to be the judge of the law, that the jury alone is to pass on the facts, and that the accused shall be allowed to produce any relevant and competent evidence in his own behalf." This difficulty leads him to look for little improvement in this direction at present. He suggests taking up other and easier problems which will pave the way for more difficult ones; *e. g.*, supervision in discharging patients from insane asylums, separate institutions for criminal insane and other epileptics, etc. Work of this and similar character might in time pave the way for a general commission on insanity, from which experts could be selected, thus gradually and naturally accomplishing a reform that could not be obtained by more radical measures.

The Military Surgeon, Richmond

May

142 Modern Organization of the Medical Department of the U. S. Army in the Field and Its Application to One of the Battlefields of the Civil War. V. Havard, U. S. Army.
143 New Model Mine Ambulance. G. H. Halberstadt, Third Brigade, N. G. Pa.
144 Compulsory Prophylaxis against Venereal Disease. E. M. Brown, U. S. Navy.
145 Camp Sanitation. T. J. Kirkpatrick, U. S. Army.
146 Treatment of Gunshot Wounds of the Abdomen Advocated by French Military Surgeons. C. N. Barney, U. S. Army.
147 Litter Carrier for Transporting two Litters. M. A. Reasoner, U. S. Army.

American Medicine, New York

April

148 *Neglect of Medical Literature. B. Holmes, Chicago.
149 Therapeutics of Old Age. R. W. Wilcox, New York.
150 Gastroptosia. J. Merzbach, Brooklyn.
151 Nasal Obstruction in Children. O. Glogau, New York.
152 Pernicious Anemia, with Reference to Intestinal Autointoxication as a Causative Factor. G. R. Satterlee, and S. O. Sabel, New York.
153 Massage of the "Swell-Bodies." H. P. Smith, Pittsburg, Pa.
154 Meralgia Paresthetica, Recurring with Repeated Pregnancies. G. E. Price, Philadelphia.
155 *False or Psychic Gastropathies. T. A. Williams, Washington, D. C.
156 Operation in Old Fractures. Case of Deformed Forearm from Fractures of Both Bones, Treated by Osteotomy and Plating. A. McGlannan, Baltimore.
157 Epilepsy and the Bromides. W. Lesem, New York.

148. **Neglect of Medical Literature.**—Holmes complains that in our medical schools which have libraries, the medical library is not used as an engine of education. There are no theses, no journal clubs, no investigations of the literature of any medical or surgical subject. The consequence is that the student accepts his instructor as infallible and his text-book as complete and final. If the library had been used during the medical course the student would early learn the place, not only of his text-book, but of his teacher as well.

155. **Psychic Gastropathies.**—This paper appeared under another title in the *Old Dominion Journal of Medicine and Surgery*, November, 1908, p. 365, and was abstracted in THE JOURNAL, Jan. 23, 1909, p. 331. It is also practically identical with a paper by the same author in the *Journal of Abnormal Psychology*, February, 1909.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

April

158 Graduated Outdoor Labor in Pulmonary Tuberculosis. G. Hinsdale, Hot Springs, Va.
159 *Syphilis in Its Relation to Nervous and Mental Diseases. A. Gordon, Philadelphia.
160 Tuberculosis of the Ovary treated with Tuberculin. C. C. Browning, Monrovia, Cal.
161 *Adrenal Extract in Addison's Disease. C. E. de M. Sajous, Philadelphia.
162 Tinea Versicolor. J. V. Shoemaker, Philadelphia.
163 Thyrotomy for Tumor of the Left Vocal Cord and Excessive Mobility of the Tongue. R. H. Johnston, Baltimore.
164 The Cancer Problem. J. A. McGlinn, Philadelphia.
165 Prophylaxis of Gonorrhea. T. W. Ross, Astoria, Ore.

159. **Syphilis and the Nervous System.**—Gordon discusses cerebrospinal syphilis, and syphilis and the spinal cord, peripheral nerves, and mental disease, and concludes that an individual who has once contracted syphilis, is always predisposed to its assaults on his nervous system. But there are individuals who escape this calamity. The specific poison makes a special selection among all varieties of nervous constitutions, particularly those who by reason of special hereditary or acquired influences, neuropathic so to speak, are attacked by syphilis. When confronted with such cases, therapeutic effort must be directed, not only to advice as to the mercurials and iodids, but also and especially to a special mode of living, surrounded by all precautions in regard to excesses of all sorts, to the use of alcohol, to the proper hygiene and proper diet—and this advice must hold good for years and never cease. It is preventive medicine that we must practice, as this is the most rational and the most effective method. Too much reliance must not be placed on the two great remedies which, however, have no equal in therapeutics, are admirable remedies, but are far from being infallible in syphilitic nervous diseases. On the other hand, when, in addition to mercury and iodids, we submit our patients to a most rigorous hygienic mode of living we can expect satisfactory results.

161. **Adrenal Extract in Addison's Disease.**—Sajous analyzes 120 cases and says that a number of cases are on record in which, after apparent recovery, the patients died suddenly, soon after ceasing the use of adrenal preparations. It is evident that even the possibility of curing the morbid process in the adrenals does not replace the destroyed adrenal tissue. It is here that grafting would be of curative value, but only provided small fragments of adrenal tissue be inserted, and gradually increased in number until the temperature and pulse indicate that compensation for the functionless areas in the adrenals has been effected. The 120 cases analyzed show, and his own experience has demonstrated, that what is generally known as "adrenal extract," but which in reality, is the desiccated adrenal gland (the glandulæ suprerenales siccæ of the U. S. P.) is by far the most satisfactory agent to use.

Archives of Pediatrics, New York

April

166 *Hard Curds of Infant Stools: Their Origin, Nature and Transformation. T. S. Southworth, and O. M. Schloss, New York.
167 *An Inquiry into the Status of the Kindergarten. I. A. Abt, Chicago.
168 *Congenital Hypertrophic Pyloric Stenosis. J. F. Bell, Englewood, N. J.
169 Partial Pylorectomy for Fibromyoma in an Infant Nine Weeks Old. B. F. Curtis, New York.

166, 167. Abstracted in THE JOURNAL, July 18, 1908, p. 247.

168. **Pyloric Stenosis.**—Bell is in full accord with the classification of Koplik regarding pyloric obstruction. While it seems impossible arbitrarily to outline each condition as entirely distinct and separate from others, it nevertheless gives us a clearer understanding of the conditions and reconciles the apparently discordant and contradictory reports thus far made. Bell's case reported must fall into Koplik's third division of congenital hypertrophic pyloric stenosis. The symptomatology and physical signs, operative findings, and final results, fully confirm diagnosis and justify the treatment. The general and popular notion that infants do not bear surgical operations well should be modified. Starved, atrophic, and partially moribund infants are not favorable surgical cases. Degrees of stenosis not promptly and entirely relieved by conservative treatment should be operated on before the child is too reduced to endure surgical treatment.

Journal Indiana State Medical Association, Fort Wayne

April

170 *Intrasigmoid Disease. G. W. Combs, Indianapolis.
171 Penetrating Abdominal Wounds. P. F. Martin, Indianapolis.
172 Sketches of the Medical History of Indiana (continued). G. W. H. Kemper, Muncie.
173 Psilosis, or Tropical Sprue. R. Hessler, Logansport.
174 Responsibility in Mental Disease. H. R. Lowder, Bloomfield.
175 Etiology and Treatment of Hemorrhoids. H. H. Wheeler, Indianapolis.

170. **Intrasigmoid Disease.**—Combs considers the following reasonable assumptions:

1. Angulation and ulcer in the sigmoid are frequently associated, the usual sequence being ulcer and angulation.
2. Clinically, ulcer is the medium ground between benign, inflammatory and malignant disease in the sigmoid, and is the only pathology recognized that harmonizes our present knowledge as intermediate, resultant from the anatomy and function and antecedent to carcinoma.
3. The presence of the non-recognized sigmoidal factor in pelvic disease may account for obscure postoperative pain which occurs in some cases with faultless technic and the removal of the pathology of the oviductal tract.

4. The relation of ulcer and carcinoma in the sigmoid is analogous to that in the gastric and other abdominal regions, where late investigation is demonstrating that ulcer is essential to the growth of cancer.

5. The syndrome of sigmoid disease is so frequent as to indicate that the sigmoid segment is the one of predilection for benign disease in the colon.

6. The absorption of toxins in the saccharobutyric and indolic types of chronic excessive intestinal putrefaction from the anaërobes is greatly increased in sigmoid disease, resulting in irritability, quick fatigue, depression, pronounced melancholia and sometimes the picture of pernicious anemia.

7. The general impression of the sigmoidal factor, either as concomitant or etiologic, in relation to rectal disease is inadequate.

He arrives at the following conclusions:

1. Favorable conditions exist in the anatomy and physiology of the sigmoid for the production of ulcer, the most frequent pathology of the organ.

2. Realizing in the sigmoid the maximum density and infection of the feces, here are also realized the maximum mechanical and chemical effects on the mucosa, with stercoral sigmoiditis, typical spasm from hyperesthesia, troublesome constipation and neurasthenic reflexes as results.

3. Much sigmoid disease results through trauma from the dorsal surface of the psoas muscle.

4. Distention of the colon, discharge of blood or mucus, or both, constipation, left iliac pain, or pain along the course of the sigmoid, or obscure abdominal pain, hypochondriasis, or melancholia, gastric disorders, obscure pelvic pains, symptoms indefinitely referable to the urinary tract, pain while feces are passing through the sigmoid, are some of the conditions that indicate sigmoid involvement and in which an examination with the sigmoidoscope should be made.

5. Whether sigmoid disease is produced by pathogenic bacteria, constipation, pressure of hardened feces, hyperacid condition, angulation, irritable sphincters, or other rectal disease, by accumulations of feces in acquired diverticuli which occur oftener in the sigmoid than in any other part of the intestinalis, or by trauma from the psoas, our duty lies in the recognition of the seriousness of its terminal and the manifestations of its early pathology. Action in keeping with this conviction, when intrasigmoid therapy is ineffectual, will contribute largely to surgery in the production here of a low mortality.

Mississippi Medical Monthly, Vicksburg

May

176 *President's Address: Medical Affairs in Mississippi. J. W. Gray, Clarksdale.

176. Abstracted in THE JOURNAL, May 8, 1909, p. 1533.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

April 24

1 *Movable Kidney with Details of an Operation for Fixing the Kidney. Sir W. W. Cheyne.
2 Rheumatic Fever and Valvular Disease. N. Moore.
3 *The Blood in Rickets. L. Findlay.
4 Metrorrhagia at an Advanced Age not Due to Malignant Disease. A. H. N. Lewers.
5 Enormous Fecal Tumor in a Girl with Congenital Abnormalities of Her Pelvic Viscera. H. B. Butler, A. F. Hertz, and W. A. Lane.
6 Delayed Delivery in a Case of Central Placenta Prævia. N. I. Spriggs.
7 Termination of the Thoracic Duct. F. G. Parsons and P. W. G. Sargent.
8 *Epsom Salts as a Poison. C. Fraser.
9 Anomalous Edema with Bright's Disease. R. W. S. Walker.

1. **Movable Kidney.**—Cheyne discusses the various explanations of movable kidney and eliminates all as unsatisfactory except two, viz.: that it is in part at least of congenital defect, and that it is due to mechanical causes. With regard to its appearance suddenly under trauma or strain, he suspects that in many cases in which there is a history of sudden development of symptoms that have led to the discovery of a movable kidney, the kidney has been movable beforehand without symptoms. In most cases, the kidney does not undergo any marked alteration as the effect of mobility. The symptoms occur in three groups: The first group consists of indefinite symptoms, giddiness, faintness, anemia, palpitation, neurasthenia, etc., and particularly neuralgia; the second group of symptoms consists of those due to involvement of the intestinal tract, either reflexly or by pressure; the third consists of those due to twisting or obstruction of the pedicle. He discusses these groups. Treatment is non-operative and operative. The best form of apparatus in his experience is an especially constructed corset which keeps up the entire contents of the abdomen and is reinforced by an air-pad in the right iliac fossa. It must be put on in the recumbent position. Operation is demanded in cases in which harm is being done—kinking of the pedicle, intermittent hydronephrosis or pressure on the duodenum or common bile duct. Operation is doubtful when the condition is associated with enteroptosis, also when it is accompanied by marked neurasthenia, which frequently is not benefited by operation. C. W. Suckling has reported a series of cases in which insanity appears to have been dependent on movable kidney, for it improved under Goelet's operation. The failure to benefit neurasthenia Cheyne regards as possibly due to the operation performed having been the posterior operation, which he considers unsatisfactory. Another reason for failure is that the kidney may again become loose. He urges the importance of fixing the kidney as far as possible in its normal condition, to avoid outside pressure and kinking. The tendency is to fix it too low down and too far away from the spine. He describes in detail an operation devised by him to obviate this difficulty. It is performed through an incision along the edge of the ribs and an inch below them, beginning at the edge of the latissimus dorsi and carried forward for three or four inches. The transversalis fascia is not divided, but is pushed toward the middle line, carrying peritoneum, fascia and kidney with it. He describes the method of clearing away the fat, stripping off the capsule and placing the kidney in desired position, where it is fixed by strong catgut stitches. A great advantage of his operation is that it is possible to ascertain whether other organs are partly at fault for the symptoms, and thus to remedy them. The four chief things are gallstones, duodenal ulcer, movable liver and enteroptosis and appendicular trouble. With Cheyne's incision it is possible at the time of operation to investigate these parts, and in some cases to remedy defects. He has performed his operation in many cases and is well satisfied with the results.

3. **The Blood in Rickets.**—Findlay summarizes, in the following conclusions, the investigations that he records:

1. In active and uncomplicated rickets anemia is not the rule but is to be regarded as exceptional, and, when it occurs, as due to adventitious causes.
2. On the contrary, in rachitic children the amount of hemoglobin and the number of red cells in the series examined are notably in excess of the normal average.
3. The red blood corpuscles, as a rule, vary more in size than in normal individuals of similar ages, but otherwise there is no abnormality.
4. Nucleated red cells, polychromatophiles, and myelocytes are of the rarest occurrence.
5. In rickety subjects there is little characteristic change as far as the leucocytes are concerned. They may be normal, slightly increased, or even diminished in number. The mononuclears more frequently than the polymorphs show an absolute increase in number per cubic millimeter.

8. **Magnesium Sulphate as a Poison.**—Fraser reports a case of poisoning of a boy 3½ years of age, who took a heaped-up spoonful of Epsom salts, thinking it to be sugar. He washed the salts down with milk on finding out his mistake. A few minutes later he was found suffering pain in the stomach with nausea and retching, thirst and vomiting. When seen 25 hours later he was critically ill, lying on his back, the face pinched, eyes sunken and skin pale. The mind was perfectly clear. There were intermittent colicky attacks, temperature 100.5, pulse 160 and small, tongue dry with prominent papillæ, thirst intense and the bowels had not acted. Half an ounce of urine had been passed in 24 hours. The abdomen was distended and rigid, and the skin was markedly hyperesthetic. The catheter withdrew half an ounce of dark, muddy, very acid urine, containing no albumin. The symptoms getting worse and suggesting acute peritonitis, the child was removed to the hospital and laparotomy was performed. About 2 pints of blood-stained serum subsequently found sterile were withdrawn. Green matter similar to his vomit was visible through the small intestines. No cause for obstruction was found. For 48 hours the child seemed moribund, the pulse becoming practically uncountable. Subcutaneous saline injections were made, and half a grain of calomel was given every hour. Finally flatus and feces passed, the bowels opened and recovery ensued. Fraser discusses the case and summarizes the six previously recorded cases, five of which were fatal. He discusses the theory of the action of this drug, particularly in relation to the use of salts for their paralytic effect in the treatment of tetanus.

British Medical Journal, London

April 24

10 *General Principles in the Treatment of Diseases of the Heart. Sir J. Barr.
11 Heart Block, with Fibrous Degeneration and Partial Obliteration of Bundle of His. B. Bramwell.
12 Pulsus Bigeminus. E. E. Laslett.
13 Ineffectiveness of Calcium Salts and of Citric Acid as Used to Modify the Coagulation Time of the Blood for Therapeutic Purposes. T. Addis.
14 Typhoid Complicated with Staphylococcal Septicemia. N. E. Roberts and E. E. Glynn.
15 *How Much Fluid does the Body Require? A. Haig.
16 *Occurrence of Tubercle Bacilli in the Blood in Tuberculosis. C. E. P. Forsyth.
17 Chronic Nephritis Terminating with Hemorrhage from the Bowel and Perforation of the Bowel. L. G. J. Mackey.
18 Roentgen Cinematography and Its Importance in Medicine. F. M. Groedel.
19 Tetanic Spasm. W. S. Stevenson.
20 Histology of Egyptian Mummies. M. A. Ruffer.

10. **Treatment of Heart Disease.**—Barr says that there are very few chronic diseases so amenable to treatment and so compatible with a long life of comfort, if judiciously handled, as those of the heart. Rheumatism holds the first place in its causation. In rheumatic fever there is a marked increase of sarcolactic acid, therefore all foods, such as starch and milk, which give rise to formation of lactic acid, should be omitted. There is also a tendency to fibrin formation, so that everything containing lime, *e. g.*, milk, and its preparations, cheese, gelatin, and animal jellies, should be interdicted. Also, lime raises the blood pressure. An excellent diet for rheumatic fever consists of plenty of hot water, mincemeat and poached eggs, pounded chicken, steamed sole, and other nitrogenous foods. If a carbohydrate is required, well-boiled porridge may be given. Oranges and lemons may be freely used, and later, a fair amount of farinaceous food with plenty of fruit and vegetables, but no milk. Patients with mitral lesions should drink as little fluid as possible, not more than two pints a day, and should be kept on a light dry diet. Alcoholic drinks should be interdicted, tea and coffee with cream may be taken. Lemon squash is a good drink. Tobacco should be forbidden, and in any tendency to edema salt should be eliminated from the diet. Barr then discusses the hygiene, particularly recommending the morning bath from 60 to 90° F., followed by coarse friction. He goes at length into the questions of rest, exercise, and medicinal treatment, under which last head he particularly warns against excessive lime salts in the blood. There is no condition of the heart in which alcohol is beneficial, save spasmodic affections, and in these nitroglycerin, morphin and atropin are better remedies. Patients with heart disease do better without tobacco. By the method of treatment he details —which should be read in its entirety—Barr asserts that not only may the progress of degenerative heart lesions be stayed, but often their onset may be prevented.

15. **The Intake of Fluids.**—Haig holds that the amount of fluid usually taken is more a habit than a necessity. Most patients can reduce their fluid intake with benefit to 30 ounces a day, and with the help of fruit to 25 or 20 ounces. Salts, salines, and diuretics call for more fluids. By diminishing the fluids the blood pressure can be lowered 20 or 30 mm. of mercury, thus enabling some high pressure cases to turn the balance. The gain to a diseased or dilated heart is obvious. The objections to be considered are the retention of urates and constipation; but in cases of heart disease these are secondary considerations and may be dealt with by other means, *e. g.*, a purin-free diet for the urates, and laxatives for the constipation.

16. **Tubercle Bacilli in the Blood.**—Forsyth says that tubercle bacilli may commonly be found in the blood of tuberculous patients. Using Rosenberger's method (*American Journal Medical Sciences*, February, 1909), he examined the blood in 12 cases of pulmonary tuberculosis, in 10 of which there were distinct physical signs, with tubercle bacilli in the sputum. All showed tubercle bacilli free in the blood. They were few in number, not grouped, and found with difficulty. In one case phagocytosis was noticed, in only one was there evidence of mixed infection in the blood. Forsyth points out that if it be completely proved that living tubercle bacilli occur in the blood of practically every tuberculous patient, no matter how early or circumscribed the lesion appears to be, without doubt our ideas as to the use of tuberculin must be considerably modified. The method of examination is as follows: The skin of the front of the forearm is thoroughly cleansed with liquid soap, alcohol and ether. A tourniquet is applied, and with a sterile syringe fitted with a platino-iridium needle, previously flamed, about 5 c.cm. of blood are drawn from any convenient vein. The blood is at once mixed with about an equal volume of sterile citrated salt solution. The mixture is placed in a swift running centrifuge for twenty minutes, and some of the deposit taken up on a slide to form a thick film. This is dried in an oven at 60° C., and is then placed in sterile distilled water to lake the blood. Thereafter the film is fixed and stained in the usual way.

Medical Press and Circular, London

April 21

21 Renal Calculus. A. Fullerton.
22 *Treatment of Labor in Contracted Pelvis. F. Schauta.
23 Primary Carcinoma of the Vagina. G. W. Fitzgerald.
24 Oxalate of Cerium. J. C. McWalter.

22. **Contracted Pelvis.**—Schauta describes the development of the principles governing the treatment of labor in cases of contracted pelvis. He divides the operation into three main groups: indicated measures, prophylactic operations and surgical operations. The first includes those operations indicated, not so much by the pelvic contraction, as by complicating anomalies of labor. They are the application of the forceps with the head in the pelvis, turning from a transverse presentation, breech extraction, craniotomy on the dead child, and decapitation. The prophylactic operations are interruption of pregnancy and prophylactic version. Some place the application of forceps above the brim in this group. The surgical operations sacrifice the integrity of the mother's tissues in favor of the child by widening the pelvic space—symphyseotomy or hebotomy; or by providing an artificial channel—Cesarean section. He discusses how far, in cases of contracted pelvis, we can count on spontaneous birth. It attords by far the best solution of many complicated problems and is more frequently possible than appears from statistics. By premature interference many cases of labor are directed into a wrong course and result in great injury to mother and child. At Schauta's clinic about 80 per cent. of the births with narrow pelvis actually occur spontaneously, taking into account only full-term births. The expectant treatment gives by far the best results for the mother, as regards both mortality and morbidity. He does not find that the prophesied evil consequences occur. With regard to Cesarean section, he holds that while we must not perform any operation without the consent of the patient, assuming this general consent, the choice of the operation should be left in all its details to the operator. It is high time that we should break with the tradition of the time when Cesarean section was a deadly operation. It is the habit of making an emergency operation of it that is the cause of such troubles and dangers as occur—insufficient preparation of patient, instruments and physician's hands, and a patient already exhausted and possibly septic. The idea that the country practitioner should not perform Cesarean section will disappear when he is trained to that as he is trained to the use of the forceps, etc. Reviewing his experience he says the management of labor in contracted pelvis will shape itself in the future in the following simple manner, provided it is carried out from the very commencement in a skilful manner and in an institution under strict asepsis. In patients with a conjugate above 8 cm. there is a possibility of spontaneous birth, and therefore expectant treatment is to be adopted. In women under 8 cm., Cesarean section is to be kept in view. In cases bordering on the above, *i. e.*, a conjugate of from 8.5 cm. to 7.5 cm. hebosteotomy is to be considered. This operation in a conjugate of from 8 cm. to 8.5 cm. would be an alternative operation to spontaneous birth; in a conjugate of 7.5 cm. to 8.5 cm. an alternative to Cesarean section. The choice would be determined by the size and hardness of head, the strength of labor pains, the voluntary efforts and general condition of the patient.

This method of treatment should be looked on in the future as typical. All other methods hitherto used in the treatment of labor in contracted pelvis should be looked on as non-typical.

Clinical Journal, London

April 21

25 Some Useful Prescriptions in the Practice of Gynecology. V. Bonney.
26 Results of Nasal Obstruction. S. Hastings.
27 Autoinoculation Versus Heteroinoculation in the Treatment of Established Infection (continued). E. C. Hort.

Journal of Tropical Medicine and Hygiene, London

April 15

28 Hemogregarines and Parasitology. L. W. Sambon.
29 Blackwater Fever. J. G. St. G. Queely.

Practitioner, London

April

30 Local Anesthesia in Regard to Causation of Idiopathic Paralysis and Dilatation of the Urinary Bladder. F. P. Weber.
31 Treatment of Extroversion of Bladder by Implantation of the Ureters Into the Rectum. C. A. Ball.
32 *Increased Death Rate from Diabetes, and the Possibility of Preventing the Disease, or of Postponing Its Onset. R. T. Williamson.
33 Cancer of Tongue. A. Don.
34 Treatment of Ischiorectal Abscess and Fistula. P. L. Mummery.
35 Considerations Involved in the Treatment of Mental Disease. C. H. Fennell.
36 Acute Infective Osteitis. H. W. Kaye.
37 Rhinologic Treatment of Consumptives. W. C. Rivers.
38 Diagnosis and Treatment of Gonorrhea. J. E. R. McDonagh.
39 *Chronic Infantile Paralysis Diagnosed as Morbus Coxæ. F. Hernaman-Johnson.
40 Operative Technic of a General Practitioner. A. J. F. Clarke.

32. **Death Rate of Diabetes.**—Williamson says that the death rate from diabetes mellitus in England and Wales is steadily increasing. He discusses the etiology in reference to age, heredity, race, occupation and social position, sexual relations, diet, the use of alcohol and sweet beverages, psychic conditions, physical overwork and overstrain, pregnancy and external injuries, and also its association with other diseases, obesity, gout, acromegaly, and occasionally the climacteric. "But," he says, "whatever may be the pathogenesis of diabetes, the previous history of clinical patients shows that certain antecedents of the disease are common, *i. e.*: (1) Mental anxiety, shock, overstrain; (2) excess of alcoholic beverages; (3) excess of sweet foods, or beverages containing sugar." Also, in many cases—at least 22 per cent.—there is a family history of the disease. Preventive treatment should be instituted when the onset of diabetes may be considered likely from family history, in Jews suffering from overstrain, obesity, excessive food and little exercise, in women with grape sugar in the urine during pregnancy, in all cases of gout, acromegaly and obesity, in men of 40 or 50 who have suffered prolonged mental strain, in very stout women after the climacteric, after an acute illness or examination for life-insurance when temporary glycosuria has been found, and in all cases of slight permanent glycosuria. In all cases the following precautions should be taken: All articles of diet or drinks containing sugar should be avoided. A moderate amount of starchy food is permitted unless glycosuria has been detected. Sugar is more powerful than starch in producing glycosuria. Excess of food should be avoided. Sufficient out-door exercise is necessary. Dyspepsia and constipation should be treated. If possible an occupation should be chosen that reduces mental worry, anxiety, etc., to a minimum.

39. **Chronic Infantile Paralysis.**—Hernaman-Johnson records two cases of chronic infantile palsy, both treated and diagnosed as tuberculous disease of the hip. Both these conditions are amenable to treatment, but of a diametrically opposite nature, in the one case, stimulation and exercise being called for, in the other physiologic rest. The importance of diagnosis is therefore insisted on, and after a discussion of the case the author sums up the diagnosis as follows: In cases of general weakness of a lower limb in children, with symptoms referred chiefly to the hip, do not be over-ready to diagnose morbus coxæ. If possible, conduct the physical examination before hearing anything of the history, either personal or family. If aware of the existence of tuberculous diathesis, be on your guard.

1. *Pain.*—Examine for this by (a) striking the heel in a direction perpendicular to the leg, the patient lying down and holding the limb out stiffly; (b) jamming together the trochanters with both hands; (c) likewise the iliac crests. Next, manipulate the ankle, knee, and hip joints in all directions, at the same time noting any limitation of movement. Apply Thomas' test to detect permanent flexion of the thigh. Do not ask the child if these things hurt, but watch for wincing or expression of pain in the face. If all these tests are negative, the presumption against the existence of morbus coxæ is very strong indeed.

2. *Paralysis.*—Find out how far voluntary movement can be carried out. Especially look for weakness of the extensors of the foot. A tendency to foot-drop without contractures is almost diagnostic of infantile palsy. If retraction of the calf muscles exists, the evidence is of less value. The application of the faradic current to the muscles is of use in investigating a case; a feeble or absent response indicates nerve lesion.

3. *Tumor.*—Remember that when the glutei are markedly flattened, the trochanter may stick out, giving the appearance of a tumor. Careful comparison with the sound side will reveal the fact that the enlargement is apparent only. In case of doubt, a radiograph should be obtained.

4. *Symptoms.*—Not till the physical examination has been completed, should symptoms be inquired into. Pain is generally complained of, but always as the result of exertion. In some cases of infantile palsy, a walk of 100 yards may cause aching of the limb for hours, often spoiling a night's sleep. The pain, however, is not acute, being always described as of an "aching" or "dragging" character; it is never brought on by an accidental knock or jar; and never takes the form of "night starts." The general condition in cases of infantile paralysis is often as bad as, or worse than, in tuberculous hip; poor nutrition, bad appetite, and digestive troubles being the rule.

5. *History.*—Parents nearly always attribute these afflictions of the lower limbs to a fall in infancy or early childhood. Such statements are generally to be regarded as valueless, except in so fas as they help to fix the date when the disease was first noticed. A history of extreme chronicity, from five to ten years without much alteration in the condition, is strongly against the existence of tuberculous disease.

British Journal of Children's Diseases, London

April

41 Medical Inspection of Elementary School Children. G. Carpenter.
42 Origin of the Feeble-Minded (concluded). W. A. Potts.

Australasian Medical Gazette, Sydney

March

43 Roentgenography in Urinary Surgery. L. H. Harris.
44 Whole-Time Medical Officers of Health. J. A. Thompson.
45 The Presystolic Murmur. J. M. Gill.
46 Plea for Mercurial Inunction in Syphilis. J. L. Gibson.
47 Epidemic of Pneumonia. R. E. Shuter.
48 Surgical Emphysema—Aërodermectasia. T. Fiaschi.
49 The Buttercloth Method of Ether Anesthesia. A. J. Turner.
50 Varicocele. J. H. Chauncy.
51 Congenital Malformation of the Esophagus. J. A. Cameron and G. S. Lichtoller.
52 Endothelioma of the Neck. C. MacLaurin.

Annales de l'Institut Pasteur, Paris

March, XXIII, No. 3, pp. 177-271

53 Amebic Dysentery in Cochin China. (Recherches sur la dysentérie amibienne en Cochinchine.) F. Noc.
54 Physiologic Study of Papain. E. Pozerski.
55 Treatment of Trypanosomiasis in Horses by Orpiment, alone or with Arsoxyl. A. Thiroux and L. Teppaz.
56 Trachoma in Algiers. (Histoire pendant un an, du trachome dans une agglomération algérienne.) E. Sergent.
57 Presence of an Intestinal Emulsin in the Higher Animals. P. Thomas and A. Frouin.

Archives Générales de Chirurgie, Paris

March, III, No. 3, pp. 321-330

58 *Postoperative Embolism in the Lung. C. Lenormant.
59 *Perineal Prostatectomy by the Ischio-bulbar Route. Soubeyran.

58. **Postoperative Embolism in the Lung.**—Lenormant has observed four cases of lung complications after laparotomies or removal of the breast, a proportion of 0.5 per cent. of 792 operations during the last four years. He ascribes the thrombosis to infection, not necessarily occurring during the operation but possibly traceable to the paralysis of some part of the digestive tract with absorption of septic matter. He reviews the literature on the subject, and states that in 233 cases on record the embolism proved fatal in 106. The only treatment is by prevention, and he advocates digitalis or other suitable drug when, before the operation, the pulse is small and the heart action weak and irregular, and also in case of large abdominal tumors. In the same way injections of salt solution are indispensable, he believes, before attempting any operation when the patient is anemic from profuse hemorrhage or the arterial tension is much reduced, and the anesthesia should be as brief as possible. Ranzi advises preliminary scopolamin-morphin to reduce the amount of chloroform; Witzel prefers ether, as it is less depressing for the heart. In operating, the veins must be managed care-

fully to avoid injuring them; it is preferable to ligate the veins separately rather than in a bunch, if of any size. In abdominal operations, injury of the epigastric veins must be especially avoided. After the operation stimulants for the heart, saline infusion and copious intake of fluids combat the thickening of the blood. Some recommend an early purge to counteract the tendency to stasis in the intestines, and all agree that the patient should not be allowed to lie perfectly still, as this favors the production of thrombosis, although Lenormant does not approve of allowing patients to get up early. When signs of embolism develop, the most daring measures are justified if they are logical and the surgeon feels capable of carrying them through. The few attempts of this kind on record have not given any actual success to date, but some of them confirm the possibility of success under favorable conditions. In the nine cases in which the artery was incised for removal of the clot, other clots were found lodged in inaccessible parts of the artery in five cases, but the partial successes realized by Sievers and Trendelenburg in the four others should encourage surgeons to renewed efforts.

59. **Ischio-Bulbar Perineal Prostatectomy.**—Soubeyran reviews the various technics for prostatectomy and then describes two cases in which he removed the prostate through an incision extending from the tuberosity of the ischium to the symphysis pubis, along the ischiopubic ramus. The incision commences just below the root of the scrotum, slanting outward and terminating a few inches on one side of the anus. The ischio-cavernosus and the bulbo-cavernosus muscles are spread apart with the finger or a blunt instrument, leaving a space between them, the ischio-bulbar space, which allows ready access to the prostate after severing the middle perineal fascia and the deep transversus perinei. The advantages of this technic, which he explains with five illustrations, are the facility and rapidity of the operation, not interfering with the muscles of the anus, the slight and easily arrested hemorrhage, and the fact that the rectum does not come into the field of operation and thus has no chance to be injured. In considering the indications for the various technics, infection of the bladder renders the high operation more dangerous and the perineal technic is preferable, as also when the general condition is bad and there is obesity or special danger from pulmonary complications.

Archives Générales de Médecine, Paris

March, LXXXIX, No. 3, pp. 129-192

60 *Familial Nervous Diseases. (Maladies nerveuses familiales.) M. Massalongo.

61 *Bubonic Plague. (Récentes acquisitions sur la pathogénie et l'étiologie de la peste.) V. Belleli.

60. **Familial Nervous Diseases.**—Massalongo classifies the familial nervous affections in nine groups, the syndromes respectively, with ataxia, with convulsions, amyotrophy, myoclonia, paralysis, trophovasomotor or sensory disturbances and the syndrome with neuroses or psychoses. The various familial nervous affections show more than anything else the power, the despotism of heredity in pathology, and he approves of Galton's suggestion that the state should favor the union of individuals endowed above the average, awarding premiums to facilitate their union under advantageous conditions. He thinks that this "eugamy" would be of inestimable advantage, not only financially but as a means of educating the public, an education absolutely indispensable for the more radical reforms.

61. **The Plague.**—Belleli is director of the sanitary service at Port Said, Egypt, and he here reviews some of the conclusions from his experience. He states that the plague bacilli are found in the blood from the start in fully 45 per cent. of the cases of bubonic plague, even the mildest forms. The bubo is the manifestation of secondary infection of the lymphatic system. The malaise and fever may have been evident for six or seven days before there is a sign of a bubo. It seems that the bacilli are held in the lymphatic glands after primary infection of the blood, and the secretions destroy the bacilli if they are not very virulent, the bubo resulting. In more serious infection the defensive action on the part of the lymphatics is not strong enough to arrest the infection and secondary septicemia results. He is convinced that when the plague localizes in the lung there is mixed infection with the pneumococcus, the latter preparing the soil and facilitating rapid infection of the lung by the plague bacilli. It seems probable that the bacilli may become less virulent after a time so that they are unable to infect man, while rats, being more susceptible, still contract and die of the disease. This would explain the experiences at Port-Said where, since the extensive human epidemic of 1900, plague rats have been found in great numbers, especially in the spring, while only a few human cases have occurred and only at long intervals. The rat flea is apparently the intermediary between rat and rat and between rat and man, but it seems evident that multiple passages from man to man are necessary for the virus to become sufficiently virulent to engender extensive human epidemics. While still endeavoring to exterminate rats, prompt isolation of human cases, to prevent the passage of bacillus from man to man and thus prevent the enhancing of its virulence, is the essential factor in prophylaxis. As this is now systematically done in most civilized countries, plague does not get a foothold, and no epidemic results from the isolated imported cases.

Bulletin de l'Académie de Médecine, Paris

April 13, LXXIII, No. 15, pp. 427-442

62 *Progressive Dilatation of Stenosis of the Larynx after Laryngostomy. Sieur and C. Perier. Id. Progressive Dilatation of Spasmodic Constriction of the Esophagus. Guisez Delherm, and C. Perier.

62. **Dilatation of Stenosis of Larynx and Esophagus.**—Sieur's two patients were young soldiers requiring an emergency tracheotomy, the first for fracture of the larynx from the bite of a horse, the other for phlegmasia of typhoid origin, with prolonged suppuration and necrosis of cartilage, which did not heal for eighteen months. The progressive dilatation with red rubber drains after laryngostomy finally proved successful in each case. Success depends on going ahead very slowly after the subsidence of all inflammation; there is danger of bronchopneumonia if this rule is transgressed. He changes the drain every second day to insure its elasticity. It should reach from the upper part of the larynx, leaving the epiglottis free, down to the tracheotomy tube, its slanting lower end fitting between the top of the tube and the posterior wall of the trachea. Guisez and Delherm state that esophagoscopy revealed the absence of the assumed cancer in 18 patients out of 220 examinations made with the esophagoscope. The spasmodic constriction is seen like a narrow slit or in the shape of a deep funnel with a punctiform opening below which resists the passage of a sound. The aspect is so characteristic that it can never be taken for cancer when once seen. The diagnosis once established, the first indication is to introduce a sound to permit the patient to be fed, and then to dilate the constriction and by removing the obstacle allow the distended part of the esophagus above to regain its elasticity. Rinsing out the esophagus with a slightly alkaline fluid hastens the cure by attenuating the reflexes. They have thus cured eleven patients, including nine with great distention of the esophagus above the spasmodic constriction. The esophagoscope confirms the diagnosis and permits the introduction of a sound under direct inspection which otherwise it seems impossible to introduce. Perier comments that the introduction of a stiff tube is liable to do injury unless oversight of the conditions is obtained beforehand by radioscopic examination.

Archiv für Gynaekologie, Berlin

LXXXVIII, No. 1, pp. 1-215. Last indexed April 17, p. 1208

63 Premenstrual Changes in the Epithelium of the Glands in the Uterine Mucosa. (Die Drüsenepithelveränderungen der Uterusschleimhaut im Intervall und Prämenstruum.) R. Schröder.

64 *Tuberculosis of the Female Genitalia. (Ueber Tuberculose des weiblichen Genitalapparatus.) M. Simmonds.

65 *Convulsions in the New-Born Infant. (Ueber Krämpfe bei Neugeborenen.) P. Esch.

66 Congenital Displacement of the Heart. (Ectopia cordis congenita.) A. Rieländer.

67 "Milk Glands" in the Axilla. (Die sogenannte Achselhöhlenmilchdrüse und deren Genese.) L. Seitz.

68 Bacteriologic and Clinical Research on Efficiency of Anti-streptococcus Serums. T. Heynemann and C. Barth.

69 *The Syndrome in Fatal Tardy Chloroform Poisoning. (Ein typisches Krankheitsbild von protrahirtem Chloroformtod.) A. Sippel.

70 Ovarian Tumor. (Zur Lehre von den Lymphangioendotheliomen des Eierstocks.) H. Eymer.

64. **Tuberculosis of Female Genitalia.**—Simmonds states that he found 80 cases of tuberculosis in the female genitalia among 6,000 female cadavers. This is a proportion of 1.33 per cent. of all the female cadavers, the percentage being highest in the second decade. In 87 per cent. the tubes and in 76 per cent. the uterus was affected, and old tuberculous lesions elsewhere in the body were the rule. The tubes are most frequently the primary seat of the genital tuberculous lesions. In some cases the earliest phase of the tuberculous process in the tube is merely a bacillary catarrh with tubercle bacilli in the lumen, without changes in the walls. A pregnancy may continue even with extensive genital tuberculous lesions, but it hastens the development of the latter; even extrauterine pregnancy may occur. He never encountered any evidences of spontaneous healing of a tuberculous process in the female genital organs, but has noticed that the course is extremely slow in some cases, particularly in elderly women, in whom a tuberculous pyometra may persist for many years without change. In a number of cases the microscope was the only means of determining the tuberculous nature of the endometritis. He suggests the advisability of microscopic examination of scrapings of the uterus in all cases of tuberculous peritonitis. Operative removal of the focus is the only treatment if the general condition permits; tuberculous lesions in the lungs and tuberculous peritonitis are liable to be arrested or to heal, while the genital tuberculous affection otherwise continues an irresistibly progressive course.

65. **Convulsions in New-Born Infants.**—Esch discusses the functional and organic convulsions in new-born infants, citing some statistics from French clinics showing a percentage of from 0.18 to 2.69 per cent. in the maternities with from 600 to 5,078 deliveries. The mortality ranged from 25 to 100 per cent. In 49 cases the convulsions were ascribed to umbilical infection in 5, to edema and asphyxia in 3 each, and to inherited eclampsia and syphilis in 1 each. In one case personally observed the symptoms of general pressure on the brain, evidently due to some "supratentorial hemorrhage," persisted for three days and then subsided. Delivery had been normal and brief, with normal pelvis, so that mechanical injury seems out of the question. The various organic affections liable to induce convulsions in the new-born are reviewed. Treatment should aim to avoid excitation from without, bright light, change of temperature, etc., with small doses of bromids and chloral by the rectum and, possibly, lumbar puncture with measures to aid the elimination of autotoxins.

69. **Tardy Chloroform Intoxication.**—Sippel calls attention to the remarkable coincidence that in the dozen cases of "tardy chloroform death" on record the operation had been undertaken twice on account of torsion of the pedicle of an ovarian cyst and twice on account of large irreducible hernia of the omentum. A causal connection seems unmistakable, and he thinks it probable that certain toxins were produced by the interference with the circulation in these cases, which had a special injurious action on the parenchyma, and on the parenchyma of the liver in particular. In another case the thigh had been exposed to the Roentgen rays just before the operation. Toxins may have been generated in this and the other cases which conferred on the parenchyma cells a special affinity for the chloroform, thus interfering with the elimination of the anesthetic. He gives the details in full of nine cases, including one from his own experience. His patient was a young woman, healthy, except possibly for a tendency to chlorosis, requiring correction of torsion of a large ovarian cyst, which was removed under chloroform, about 60 gm. of which was used. The operation proceeded smoothly and the patient seemed to bear the anesthetic so well that other was not substituted toward the last as is usually the custom. There were no disturbances afterward and she seemed to be convalescing smoothly when late the next day she began to be restless, vomited, the pulse became soft and rapid, the abdomen being still flat and non-sensitive except a little tenderness in the liver region. The eyes showed a tendency to jaundice and the catheter urine contained much albumin, while the patient rapidly presented the appearance of severe intoxication as in the stupor of eclampsia. The coma became deeper the next day and vomiting of a thin, blood-stained fluid was almost incessant, the jaundice becoming more intense, with anuria and heart failure in 68 hours after the laparotomy. Autopsy revealed entire absence of peritonitis and of inflammatory reaction in the field of operation, but the typical pronounced fatty degeneration in the liver confirmed the diagnosis made during life, the clinical and pathologic picture being the counterpart of the cases on record of this tardy fatal chloroform intoxication. Forty articles from the literature on the subject are reviewed and the practical conclusion emphasized that every effort must be made not to allow the blood to become too concentrated before the operation, but rather to dilute it, as this favors the ready elimination of the anesthetic by the lungs. Another conclusion is that the glycogen content of the liver cells must be kept at or above par, as glycogen is such an important factor in burning up the fat. The patients must be supplied with adequate amounts of carbohydrates long enough before the operation to insure the possibility of ample production of glycogen in time. This conclusion is based on Rosenfeld's experimental research on the rôle of glycogen in the oxidation of fat. The autopsy histologic findings of the personal case reported are shown in a large colored plate.

Archiv für Verdauungs-Krankheiten, Berlin

April, XV, No. 2, pp. 161-324

71 *Intermittent Gastrosuccorrhea. (Der intermittierende Magensaftfluss.) E. Allard.

72 *Extra-anal Non-operative Treatment of Hemorrhoids. (Eine neue unblutige Behandlung der Hämorrhoiden.) I. Boas.

73 Clinical Import of Gastric Hypersecretion and Hyperacidity. (Zur Beurteilung der Hypersekretion und Hyperacidität des Magens.) J. Forschbach.

74 *New Method of Estimating the Permeability of the Pylorus and an Attempt at Testing the Pancreatic Function Directly. M. Einhorn (New York).

75 Theoretical Study of Saline Cathartics. (Zur Lehre von den Abführmitteln. IV. Zur Theorie der Bitterwasserwirkung.) H. Ury.

76 *Early Diagnosis of Gastric Carcinoma from Cytologic Examination of the Rinsing Water. (Diagnose des Magenkarzinoms auf Grund der cytologischen Untersuchung des Spülwassers. Normaler und pathologischer Zelleninhalt des Magens.) G. Marini.

77 The Work of the Stomach Glands and Pancreas on a Fish and Meat Diet. (Arbeit der wichtigsten Verdauungsdrüsen bei Fisch- und Fleischnahrung.) W. N. Boldyreff. Commenced in No. 1.

71. **Intermittent Gastrosuccorrhea.**—Allard concludes from the clinical experiences related and study of the literature that intermittent excessive production of gastric juice is always a symptomatic phenomenon, secondary to some primary cause within or without the stomach.

72. **Extra-Anal Non-Operative Treatment of Hemorrhoids.**—Boas describes a new method of treatment which is directly contrary to the teachings of ages that hemorrhoids should be returned into the bowel. He has sometimes found empty hemorrhoid sacs, evidently nodules which had been gradually obliterated by a more or less gradual expression of their contents. This natural healing must have occurred as the result of a process directly the reverse of what the text-books teach in regard to keeping the hemorrhoids in the bowel. He has imitated this natural process in eight cases of hemorrhoids during the last few months and has been surprised at the uniformly favorable results. The hemorrhoids are pushed outside the anus by the patient's straining, supplemented by the use of a suction apparatus if necessary, to draw all the nodules outside. That is all; the patients lie down for the first three or four days or not, as desired. A ring of edema forms around the anus, which gradually shuts off the nodules from the circulation. The edematous ring may be tender and the distended nodules grow more and more turgid at first, then they gradually turn gray and shrivel, with sometimes a little ulceration. By the end of a week they are only half their former size and the smaller ones have entirely disappeared; the others gradually grow paler and paler and finally subside completely. The course of treatment required only

one or two weeks in the majority of his cases. When the pains were severe during the first two or three days, as in a few cases, he inserted a suppository of morphin or codein with belladonna, but a dressing of aluminum acetate was generally sufficient and even this was not necessary in some cases. In others slight cauterization with silver nitrate or dusting with calomel or bismuth may have hastened the healing of the ulcerations.

74. Summarized in THE JOURNAL, July 4, 1908, p. 73.

76. **Diagnosis of Gastric Cancer from Cytologic Examination of the Rinsing Water.**—Marini gives an illustrated description of the characteristics of the tumor cells found in the rinsing water in 37 cases of gastric cancer, comparing them with the epithelial cells found in the stomach content in health. He affirms that search for tumor cells in the water after lavage of the stomach is the easiest, simplest and most reliable diagnostic measure at our command and may reveal the existence of carcinoma even in its incipiency. His illustrations show that the structure of the cells may indicate even the shape of the carcinoma, its location and other features. He is convinced of the diagnostic importance of even isolated tumor cells in the rinsing water, and relates the details of several cases in which the course of the affection later confirmed the diagnosis based on this finding.

Berliner klinische Wochenschrift

April 5, XLVI, No. 14, pp. 625-668

78 *Suture of Lung in Gunshot Wounds. (Lungennaht bei Schussverletzungen.) M. Borchardt.
79 Differentiation of Tubercle Bacilli by Antiformin. (Die Brauchbarkeit des Antiformins zum Nachweis von Tuberkelbacillen.) O. Seemann.
80 Chemical and Microscopic Study of Fatty Degeneration of the Kidneys. (Nierenverfettung.) E. Kraunitzky.
81 *Relations between the Hypophysis and the Ovaries. (Beziehungen zwischen Hypophysis und Eierstöcken.) L. Thumim.
82 Technic and Indications for Operative Treatment of Retroflexion, especially by Vaginal Fixation of the Uterus. J. Sonnenfeld.
83 *Streptococci in Children's Diseases and Serotherapy. J. Ritter.
84 *Pyelocystitis in Children. (Die Pyelocystitis des Kindesalters.) F. Göppert.
85 *Electric Cautery in Treatment of Hypertrophy of the Prostate under "Irrigation Urethroscopy." (Galvanokaustische Eingriffe in die Urethra.) H. Goldschmidt.
86 *Local Electric Light Baths. (Ein handlicher Universalapparat zur Licht- und Wärmbestrahlung.) Buttersack.

April 12, No. 15, pp. 669-716

87 Placental Origin of Eclampsia. R. Freund.
88 Catatonic Psychosis as Manifestation of Sinus Thrombosis. G. Stertz.
89 *Antistreptococcus Serum. H. Aronsen.
90 Immunity to Syphilis and Syphilitic Infection of Testicles in Monkeys. (Zur Frage der sogenannten Syphilisimmunität und der syphilitischen Hodeninfektion bei Affen.) A. Buschke and W. Fischer.
91 Mineral Water and Uric Acid. (Das Karlsbader Wasser und die Harnsäure.) A. Rosenthal.
92 Eye Diseases and Gynecology. (Augenkrankheiten in ihren Beziehungen zur Gynäkologie.) E. Runge.

78. **Suture of the Lung.**—Borchardt has recently operated in two cases of injury of the lung, and this experience in addition to study of the literature has convinced him that it is not necessary to attempt to suture the lung except when there is primary excessive acute or subacute hemorrhage, extensive pneumothorax or cellular emphysema or when the walls are much infected with a wide gaping wound. Except in these rare conditions it is wiser not to expose the patients to the dangers of an unnecessary operation.

81. **Relations Between Hypophysis and Ovaries.**—Thumim has made a special study of the relations between the ductless glands, and recently reported a case in which a tumor in the suprarenals was accompanied by atrophy of the ovaries and male characteristics in respect to growth of hair, bass voice, etc. In a case here described in detail, the loss of ovarian functioning coincided with the development of a tumor of the hypophysis and development of acromegaly. The patient had passed through a normal puberty, had married at 21 and soon after this the menses became irregular and finally ceased altogether, probably as the tumor in the hypophysis began to develop. The first sign of trouble was hoarseness; in a few months vision grew defective and Roentgen examination confirmed the assumption of a tumor in the hypophysis. The symptoms continued a progressive course under hypophysis tablets, but after a few months they seemed to be arrested and the patient has remained in comparatively fair condition during the few months since, and refuses to allow any operation. It seems evident, Thumim thinks, that ovarian, rather than hypophysis treatment is indicated in this and similar cases, and the assumption seems plausible that disturbances resulting from excessive ovarian functioning, such as excessive menstrual hemorrhage, nymphomania and other psychoses, might be combated by hypophysis tablets. The pineal gland must also be considered in connection with the relation between the glands with an internal secretion. Not merely for organotherapy, but also for physiology and pathology these interrelations will surely prove a fruitful field for research.

83. **Streptococci in Children's Diseases.**—Ritter found streptococci on the tonsils almost constantly in 300 cases of tonsillitis, but only in 33 out of 117 cases of acute articular rheumatism. Streptococci were also present in the majority of cases of pemphigus and impetigo and in 23 of 100 cases of aphthous ulcerative stomatitis. In diphtheria in particular the presence of streptococci is the criterion of the imminence of the danger. In 100 cases of scarlet fever streptococci were found in only a few and none in the rapidly fatal ones. In all these affections, however, the streptococcal invasion was always secondary; in erysipelas alone the streptococci seem to be the causal primary germs, and they also seem to be the first on the spot in recent suppurations and acute infections of wounds, although they may be accompanied by staphylococci. The streptococci in all these affections are practically identical and their varying virulence depends on the soil. Examination of 16 patients with frequently recurring erysipelas, showing a peculiar affinity for this streptococcal affection, disclosed an abnormally small proportion of white corpuscles—below 4,000 and 5,000. This suggests that the blood of these patients is incapable of interposing an effectual resistance to the invasion of the streptococci. Antistreptococcus serum was injected in 22 severe cases of erysipelas, with good results. The tabulated findings show that in every case without exception the process was promptly arrested and subsided, in marked contrast to 87 other cases in which the serotherapy was not applied. In 19 cases of scarlet fever with streptococcus invasion 10 of the patients recovered under serotherapy. In 14 cases of diphtheria of the severest type the diphtheria antitoxin was supplemented by antistreptococcus serum and 6 of the patients recovered, all of whom he is confident would have been doomed without the serum.

84. **Pyelocystitis in Children.**—Göppert remarks that from 1.1 to 1.2 per cent. of the children brought to his office are suffering from pyelocystitis; he has notes of 130 such cases and here describes a few clinical types. The outcome depends on early appropriate treatment; fully 20 per cent. of his little patients succumbed, as medical aid was not sought until the affection was far advanced. Without treatment, all the severer cases in children under eighteen months inevitably terminate fatally, either during the acute attack or from chronic debility. A complete cure under suitable treatment may be anticipated, even when there are evidences that restitution is not complete for a year or two. Chronic trouble may persist and explain certain cases of menstruation pyelitis and pregnancy pyelitis in later years. Even in the most favorable cases a recurrence in the first two months may be expected in about 20 per cent. Subjective improvement may be counted on in two or three days under appropriate treatment and complete recovery in from ten to thirty days in infants, and more rapidly still in older children. The aim in treatment is to rinse out the kidneys by copious intake of fluids; infants require this even more than adults as they suffer so readily from lack of water. In case the symptoms are severe he advises pouring into the stomach, through a catheter introduced through the nose, from 150 to 200 gm. Carlsbad Mühlbrunnen water at a temperature of 40 or 41 C. (104 F.). In less serious cases he injects into the rectum two or three times a day a pint of warm Carlsbad water or lime water diluted to one-half. The transformation of the acid into an alkaline reaction in the urine hastens recovery, unless there is ammoniacal decomposition, in which case the

urine should be rendered acid. He found cranberry juice most effectual for this. His experience has further confirmed the benefit from salol or other drugs to attenuate the virulence of the bacteria. During the acute phase he gives from 0.05 to 0.2 gm. salol five or eight times a day to children from two months to three years old. Improvement is generally manifest in thirty-eight hours, but a copious supply of water must be kept up or further trouble is inevitable.

85. **Irrigation Endoscopy and Galvano-Cauterization of the Urethra.**—Goldschmidt's method of direct visual inspection when the urethra is distended with water has been described in these columns. He here gives eight views of the enlarged prostate seen by this means, the findings explaining the mechanism of retention of urine and the easiest way of restoring permeability. A needle or small knife can be inserted in the protuberant lobe of the prostate and the resulting shriveling opens the passage for the urine. Not the depth of the incision but its being carried throughout the entire length of the lobe is the main factor in the success. This method of treating enlarged prostate is indicated only in the early stages and does not attempt to compete with prostatectomy.

86. **Electric Apparatus for Local Application of Heat.**—The apparatus is shaped like a drum but opens sideways into two parts, each half containing three incandescent electric lights. The opened drum fits over the shoulder, leg or any part desired and the heat can be graduated at will.

89. **Antistreptococcus Serum.**—Aronson has been experimenting on monkeys, mice and other animals with antistreptococcus serum. Among the results obtained he mentions success in saving monkeys by means of immune horse serum from the effects of streptococcus peritonitis, otherwise fatal in eighteen hours at latest. He urges the authorities to make arrangements for further studies of this kind in the tropics where the anthropoid apes can be procured at less expense for research on serum prophylaxis and treatment of tuberculosis, leprosy, syphilis and cancer, besides the streptococcus affections.

Deutsche medizinische Wochenschrift, Berlin

April 15, XXXV, No. 15, pp. 657-696

93 *Gout and Rheumatism. W. His.
94 *Therapeutic Action of Fibrin. (Wirkungen des Fibrins.) S. Bergel.
95 *Serodiagnosis in Postconceptional Syphilis. (Postkonzeptionelle Syphilis und Wassermannsche Reaktion.) Wechselmann.
96 Simplified Procedure for Serodiagnosis of Syphilis. (Vereinfachtes Verfahren der Serumdiagnose bei Syphilis.) N. A. Tschernogubow.
97 *Cerebrospinal Fluid with Postdiphtheric Paralysis. (Zur Klinik postdiphtherischer Pseudotabes.) L. Roemheld.
98 Treatment of Laryngeal Tuberculosis with Marmorek's Antituberculosis Serum. B. Jereslaw.
99 *Superheated Air in Treatment of Pleuritic Effusion. (Behandlung des pleuritischen Exsudates.) L. Fellner.

93. **Gout and Rheumatism.**—His emphasizes the frequency of groups of symptoms in gout which certainly have no connection with uric acid, mentioning among them dyspepsia, skin diseases, myalgia and neuralgia, arteriosclerosis and granular atrophy of the kidney. These and other phenomena observed suggest that the disturbance in the purin metabolism is not the true essence of gout but is merely one symptom of a more general disturbance. A number of cases encountered in the last few months confirm his idea that in rheumatism, aside from all the cases with known or probable etiology, such as trauma, inflammation, acute rheumatism and infections, there are a large number of cases in which the arthritis must be regarded as the manifestation of some general cause not localized in the joints. This applies particularly to Heberden's nodes, whose connection with gout and diabetes has long been known, although they may develop without either. This characteristic form of arthritis is so unmistakably independent of external causes that some endogenous injury must be accepted for all cases. Some typical examples are related of the many different ways in which chronic arthritis may be connected with an endogenous or familial predisposition to disease; they also demonstrate its close connection with gout. The disturbance in the purin metabolism is peculiar to gout and has nothing to do with chronic arthritis. It is important to differentiate the two, and Roentgen examination may aid, especially when the joints are deformed; gouty tophi cast no shadow. In dubious cases the criterion is the elimination of purin or examination of the blood for uric acid after four or five days of purin-free food. This differentiation is important on the practical grounds that severe chronic arthritis induces a tendency to cachexia and phthisis. It is purposeless and harmful to restrict such patients to a purin-free diet. Restriction to a milk-vegetable diet is imperative only in case of certain gout, or when the arthritis develops with other signs of an inherited taint. The gouty diathesis is liable to manifest itself in some other form than defective uric acid metabolism, while certain non-gouty forms of chronic arthritis may develop on a predisposing diathesis although the purin metabolism may not be disturbed.

94. **The Therapeutic Action of Fibrin.**—In this communication from Bier's clinic Bergel relates experiments which show that fibrin plays in the body the part of a protecting and healing substance. It possesses leucotactic, hyperemic and fermentative properties while stimulating the production of granulations and connective tissue and checking the growth of bacteria. He says that it is the fibrin which stimulates wounds to heal, thrombi to become organized, transplanted tissue to heal into its new bed, and callus to form after a fracture. Fibrin supplied from without displays all these properties as in the natural processes, and hence he advises the local application of a sterile, durable, pulverized fibrin as a physiologic aid to promote the rational healing of wounds.

95. **Serodiagnosis of Postconceptional Syphilis.**—Wechselmann affirms as the conclusion of his research that the newborn require antisyphilitic treatment when a positive Wassermann reaction is obtained and that, in case of negative findings, the test should be repeated now and then. If the reaction gives the same response in both mother and child, she can be allowed to nurse it, while a negative reaction compels repeated clinical and serodiagnostic control. A child giving a negative response should not be nursed by the mother giving a positive response. He is convinced that syphilis may exist for years exclusively in the interior of the body without the slightest signs or symptoms to reveal its presence. This is particularly liable to occur in women infected by their husbands in a late phase of syphilis, the virus probably being much attenuated. The complement-fixation test is the only means at our disposal that allows us insight into these occult cases.

97. **Cerebrospinal Fluid in Postdiphtheritic Paralysis.**—Roemheld reports a case in which diphtheria in a merchant of 30 was followed by paralysis involving the muscles of accommodation, the palate and the legs. The cerebrospinal fluid contained an abnormal proportion of albumin which gradually subsided as the patient improved under treatment. In another case in a child the paralysis had subsided but the patient became imbecile; the proportion of albumin in the fluid at 18 was exceptionally large. These findings suggest that prolonged postdiphtheritic paralysis may be the result of changes in the central nervous system as well as of a peripheral neuritis.

99. **Treatment of Pleuritic Effusion.**—Fellner applied superheated air to one-half of the thorax in the effort to induce absorption of an effusion which had for months resisted all other measures. The heat was at first 80 and 100 C. (176 and 212 F.), increasing later to 120 and 140 (248 and 284 F.). The sittings were at first 15 and later 30 minutes long, given every second day at first, then for 2, 3, and 4 days at a time. Prompt benefit followed; after 35 applications all signs of inflammation had vanished and the patient felt better than for years.

Medizinische Klinik, Berlin

April 11, V, No. 15, pp. 529-566

100 *Action on Circulation of Various Hydrotherapeutic Measures. (Ueber die Kreislaufwirkung kalter und warmer Wasserapplikationen sowie verschiedener Medizinalbäder.) O. Müller.
101 *Tuberculosis of the Kidneys. (Nierentuberkulose.) V. Blum.
102 *Further Experience with Scopolamin in Obstetrics. (Weitere 600 Geburten im Skopolamindämmerschlaf.) J. A. Beruti. Commenced in No. 14.
103 Functional Diagnosis of the Heart. (Zur funktionellen Herzdiagnostik.) E. Herzfeld.

104 Strengthening Action of Scopolamin on Morphin and Means to Combat Morphinism. (Verstärkende Wirkung des Morphiums durch Skopolamin nebst einem Vorschlag zur Bekämpfung des Morphinismus.) A. Friedländer.
105 Treatment of Ankylosis with the Bier and Tyrnauer Apparatus. (Behandlung von Gelenksteifigkeiten mittels Bierscher und Tyrnauerscher Apparate.) Immelmann.
106 *Simple Method of Treating Dislocation of the Shoulder. (Einfache Behandlungsmethode der Schultergelenksluxationen.) G. Schichhold.
107 Questions of Climate in Balneology. (Klimatische Fragen in der Balneologie.) Dove.

100. **Effects on Circulation of Hydrotherapy.**—Müller has studied the effects on the heart action of various hydrotherapeutic measures, both in health and disease. His conclusions show the physiologic bases for the action of hot, cold and carbonated baths. With failing compensation the blood pressure drops in response to cool carbonated baths, which thus do more harm than good. When the compensation is good the response is similar to that in health, and great benefit may be derived from these measures along the lines of this physiologic reaction.

101. **Tuberculosis of the Kidneys.**—Blum reviews the experiences at the Vienna policlinic with tuberculosis of the kidneys, his conclusions all being in favor of radical surgical intervention. Even in the early cases there is absolutely no justification for internal medicinal, climatic, specific or physical therapy. They are only a waste of time, he asserts, and reduce the chances for a successful operation. The possibility of spontaneous recovery is so slight that it should not be taken into account at all.

102. **Scopolamin-Morphin in Obstetrics.**—This communication adds 600 more to the 1,000 cases of delivery in the scopolamin "twilight sleep" previously published from Krönig's clinic at Freiburg. The conclusions are about the same as those of Gauss in the former series. Measurement of the amount of blood lost in 497 cases showed an average of 382 gm., fully 95.16 per cent. of 571 deliveries being accompanied by merely moderate loss of blood. There was no morbidity in 536 cases, while in 17 there was some febrile disturbance of puerperal origin in 6, afebrile in 1, and non-puerperal in the 10 others, the total morbidity being 4.68 per cent. Of the 609 children, 7, that is 1.14 per cent., were still-born, while 10 were non-viable. About 5.14 per cent. of the 609 children (31) were in asphyxia and 9 of these children died within three days. In 2 cases death occurred from aspiration of amniotic fluid. Three children died between the third and ninth day, but 581 of the 588 children born alive left the clinic in good condition, that is, 98.8 per cent.

106. **Simple Method of Reducing Dislocation of the Shoulder.**—The forearm is held between the physician's thighs as he stands in front of the seated patient. The arm is held firm by the adductor muscles and strong pressure can thus be brought to bear as the physician pulls back while holding the shoulder with his hands. The downward pressure thus exerted overcomes the action of the antagonist muscles and stretches the capsule and ligaments until reduction is easily done. Schichhold has applied this method in many cases during the last forty years and with satisfactory results. The chief advantage of this technic is that he can regulate, himself, the force of the traction exerted to the exact amount required for reduction, as he grasps the neck of the humerus with one hand and with the other presses the head into place, both hands being free for the manipulation of the joint. The only assistance required is some one to hold the patient firm in the chair, one arm around his neck and the other in the axilla. This technic allows rapid reduction of even old dislocations without anesthesia, assistance or apparatus.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

April, XXIX, No. 4, pp. 465-552

108 Volvulus of Sigmoid Flexure in Gynecology and Pregnancy. R. Lampe.
109 Polyp of the Vaginal Portion of the Uterus. (Ueber Polypen der Portio vaginalis.) K. Pronai.
110 *Intraperitoneal Shortening of the Round Ligaments. (Zur intraperitonealen Verkürzung der Ligamenta rotunda.) M. Stolz.
111 *Operative Treatment of Complicated Retroflexion of the Uterus. (Zur operativen Behandlung der komplizierten Retroflexio uteri fixata unter Mitteilung eines Verfahrens mittelst ankerförmiger Schnittführung.) H. Palm.
112 *Alexander-Adams Operation. W. Lesse.
113 *Permanent Results of Conservative Treatment of Inflammation of the Ovaries and Fallopian Tubes. (Dauererfolge der konservativen Behandlung chronisch entzündeter Gebärmutteranhänge.) L. Prochownick.
114 *Treatment of Rupture of Uterus. (Zur Behandlung der Uterusruptur in Anschluss an sechs eigene Fälle.) G. Petren. Commenced in No. 3.

110. **Operative Treatment of Retroflexion of the Uterus.**—Stolz gives an illustrated description of his intraperitoneal method of shortening the round ligaments and compares it with similar technics that have been published. He has applied it in seven cases in the clinic with good results. Its principal feature is the intentional anteflexion and elevation of the uterus by suture of the round ligaments slanting across the lower wall of the uterus. Movable backward displacement of the uterus was the indication for the operation in most of his cases.

111. **"Anchor Incision" for Uterine Retrodisplacement.**—Palm applies the term "anchor incision" to a curving transverse incision, with perpendicular median incision, for the second step of the Alexander operation. He has had occasion to operate by this technic in seven cases of complicated retroflexion with extensive and solid adhesions and other lesions requiring ovariectomy, myomectomy or other comparatively serious operation. Four of the patients have borne children since without disturbance, twins in one case in which the patient had had bilateral femoral hernia, prolapse of the vagina and inflamed adnexa on one side with two myomas. He adds that the idea is the same as that of Kreutzmann, published six months later than the description of Palm's first operation by this technic.

112. **The Alexander-Adams Operation.**—Lesse has applied this technic in 175 cases and expresses satisfaction with it, notwithstanding that there was recurrence in 2.5 per cent. of 83 women whose later history is known. Thirty-five of the women have passed through normal pregnancy since, including 7 who had the operation done to cure sterility. In 3 other cases of this kind conception has not occurred to date.

113. **Remote Results of Conservative Treatment of Inflammation of the Adnexa.**—Prochownick discusses the limitations for conservative treatment, on the basis of 160 patients thus treated between 1892 and 1905, and recently re-examined. When recurrence took place it was during the first three years in 95 per cent. of the cases and in the majority at the beginning of the second year. It seems evident, therefore, that three years is long enough to estimate the ultimate outcome of treatment; 55 per cent. of the women were cured by a single course and 15 per cent. by a second course, of from four to six weeks. The patients at first remain in bed, with local ice applications, changing to moist heat, then to superheated air or local electric light baths, with hot vaginal douches, sitz and full baths, the mercury colpeurynter for from two and a half to three hours every day, and a hard rubber stretching cylinder introduced at night to act on the indurations and cicatricial tissue in the pelvic connective tissue; general massage is begun as early as possible, and the patient is allowed gradually to get up. At four or five day intervals ichthyol glycerin or tannin glycerin is applied locally on gauze, never stronger than 5 per cent., and all other measures are omitted on the days of the local treatment and all measures during the menses. At the slightest rise in temperature—taken four times a day—the patient must stay in bed. Abscesses are opened and drained, into the vagina if possible. In 48 of the 160 cases the conservative measures proved ineffectual and surgical intervention was required. The improvement in the subjective symptoms under complete repose was in marked contrast in these 48 women to the persistence of the objective findings; the prognosis was particularly grave in the cases in which there was not even subjective improvement and the affection recurred more severe after the first course of conservative treatment. When the first course failed to show marked improvement, the second and third courses merely postponed the inevitable surgical intervention and rendered the conditions less favorable for it. He regards it as the greatest progress in gynecology that more than half of all the chronic inflammatory affections of the adnexa can be permanently cured with patience and simple measures,

but, on the other hand, it is important to recognize early the cases for which conservative measures are not adapted so that surgical intervention can be promptly applied.

114. **Rupture of the Uterus.**—In addition to the 6 personal cases described, Petren tabulates the details of 754 cases of rupture of the uterus which he has been able to find in the literature of the last thirty years. Of these 754 women, only 238 survived, including 140 out of 501 treated by conservative measures and 82 out of 174 by a laparotomy. The statistics to date are thus in favor of laparotomy in treating rupture of the uterus, the organ being removed as a rule, and always if there are signs of infection. The general practitioner hesitating to undertake such an extensive operation had better summon the specialist to the house or have the patient taken to the hospital, where this operation is no more dangerous than operation for ruptured extrauterine pregnancy. Laparotomy was done in 10 of the cases in the statistics after the patient had thus been sent to the hospital, and with successful outcome in 6.

Münchener medizinische Wochenschrift

April 6, LVI, No. 14, pp. 697-744

115 Technic to Insure Penetration of Roentgen Rays. (Zur Tiefenbestrahlung mit Röntgenstrahlen.) Dorn.
116 *Effect of Specific Treatment on Sero-Reaction in Syphilis. (Wie wirkt die spezifische Therapie auf die Wassermann-A. Neisser-Bruckesche Reaktion ein?) R. Pürckhauer.
117 Antitrypsin Content of Blood Serum during Pregnancy. (Der Antitrypsingehalt des mütterlichen Blutserums während der Schwangerschaft.) E. Gräfenberg.
118 Auscultation Method of Determining the Blood Pressure. (Auskultatorische Blutdruckmessung.) P. Schrumpf and B. Zabel.
119 * Diagnosis and Treatment of Pancreatitis. Dreesmann.
120 Graded Light for Medical Purposes. (Wie man ein wissenschaftlich bestimmbares Licht darstellen und zu ärztlichen Zwecken verwenden kann.) J. Pick.
121 Tar Baths. (Einfaches Verfahren zur Herstellung von Teerbädern.) K. Taege.
122 Scarlet Fever and the Serodiagnosis of Syphilis. (Scharlach und Wassermannsche Syphilisreaktion.) W. Holzmann.
123 *Etiology of Postoperative Pulmonary Complications. A. v. Lichtenberg.
124 Atrophy of Optic Nerve under Arsacetin Treatment. (Fall von Sehnervenerkrankung nach Arsazetininjektionen.) Ruete.
125 Spirochetes in Gonorrheal and other Lesions during Latent Syphilis. (Verdeckte Syphilisstellen.) F. Wanner.

116. **Influence of Specific Treatment on Serodiagnosis of Syphilis.**—In this communication from Neisser's clinic at Breslau the findings of the complement-fixation test as applied in 5,200 cases of syphilis are tabulated and compared. The findings were positive in inverse proportion to the number of intermittent courses of treatment that had been applied in the individual cases. This connection is seen most strikingly in the old latent cases; with a single course of treatment the positive and negative findings were each found in 50 per cent. of the cases while the findings were negative in 90 per cent. of the cases in which there had been eight or more courses of treatment. The more energetic the treatment the smaller the proportion of positive responses. This was observed even in cerebrospinal syphilis, negative results being obtained in 5 out of the 11 cases in which thorough treatment had been given. A single course of treatment does not seem to have much effect on the findings with the test, but the general impression is all in favor of the efficacy of thorough treatment in the first months and years after infection. After the disease has become once firmly lodged in the system the chances for complete cure seem to be much less. The drugs administered may not make their effect felt in the complement test until months afterward. In time we may be able to distinguish two groups of syphilities, those with positive findings at first and then a constantly negative response later, showing that the disease has been actually stamped out, and those who respond positively all the time or intermittently, showing a peculiarly refractory form of the disease and the necessity for continued treatment. Until we have learned to classify patients thus beyond possibility of mistake, it is wisest to treat them as energetically and as early as possible after the diagnosis is once established, and to repeat the courses as energetically as possible during the first years after infection, regardless of the manifestation of symptoms or their absence.

119. **Pancreatitis.**—Dreesmann has observed six cases of acute and three of chronic pancreatitis confirmed by operation during the last year, and discusses the diagnosis and the imperative surgical treatment. He is convinced that many cases of supposed recurrence of gallstone trouble are in fact merely cases of pancreatitis. The pain is generally referred to the stomach region and is severe and persisting, usually spreading along the left side and up or down or sometimes localized in the region of the cecum; in one case it exactly simulated sciatica. The pain increases during digestion and movements, and there is tenderness in the stomach region or over the gall bladder and sometimes in the lumbar region. Syncope, collapse and cramps may be the first symptoms or large amounts of bile may be vomited. Fecal vomiting is rare, but the expression is characteristic, differing from the facies hippocratica as the complexion is grayer, possibly from loss or destruction of blood. In the 118 operations on record 8 patients died of the 40 treated by tamponing of the pancreas, and 53 after other operative measures, a total mortality of 55 per cent.

123. **Etiology of Postoperative Complications in Lungs.**—Lichtenberg reports two cases of croupous pneumonia occurring after herniotomy, confirming his conception as to the origin of this complication in an infectious embolism.

Virchows Archiv, Berlin

April, CXCVI, No. 1, pp. 1-192

126 Kupffer's Stellate Cells in the Liver. (Zur Morphologie, Biologie und Pathologie der Kupfferschen Sternzellen, besonders der menschlichen Leber.) V. Schilling.
127 Changes in the Suprarenal Medulla after Nephrotomy and Nephrectomy. (Ueber Veränderungen des Nebennierenmarks nach Nephro-und Nephrektomien.) T. Nakahara.
128 Cancer in Male Bladder Resembling Chorioepithelioma. (Chorionepitheliomähnlicher Harnblasenkrebs mit gleichartigen Metastasen bei einem Manne.) F. Venulet.
129 Tumor from Filaria Volvulus. (Histologische Untersuchungen einer durch Filaria volvulus erzeugten subkutanen Wurmgeschwulst.) E. Hoffmann and L. Halberstadter.
130 Cause of Sudden Death from Intravenous Injection of Alien Blood Corpuscles. (Die Ursache des plötzlichen Todes bei intravenöser Injektion artfremder Blutkörper.) A. F. Coca.
131 *Enlarged Thyroid in Domestic Animals. (Ueber Vergrösserung der Schilddrüse bei Haustieren.) P. N. Woudenberg.
132 Malformations of the Heart. (Herzmissbildungen.) O. Wenner.

131. **Enlarged Thyroid in Domestic Animals.**—Woudenberg gives an illustrated description of adenomatous struma found in calves and pigs, horses, dogs and a goat and cat, with colloid goiters from pigs and cancer of the thyroid in horses and dogs, with a sarcoma in the thyroid of an old dog.

Wiener klinische Wochenschrift, Vienna

April 8, XXII, No. 14, pp. 477-514

133 Extraperitoneal Cesarean Section. (Der extraperitoneale Kaiserschnitt.) W. Latzko.
134 Importance of Intestinal Tract in Origin of Anthracosis of Lungs and Abdomen. (Welche Bedeutung kann dem Darmtraktus bei Entstehung der Lungen und Bauchorganeanthrakose zugeschrieben werden?) A. Maclesza.
135 Two Unusual Cases of Acute Leukemia. A. Herz.
136 Portable Apparatus for Ozone Purification of Water. (Ueber einen tragbaren Apparat zur Ozonierung von Wasser.) E. Wiener.

Zentralblatt für Chirurgie, Leipsic

April 3, XXXVI, No. 14, pp. 481-520

137 *Restricted Localized Action of Toxic Drug. (Experimentelles zur Einführung von Novokain in abgeschnürte Körperteile.) N. N. Petrow.

April 10, No. 15, pp. 521-552

138 *Access through the Throat to the Sphenoidal Sinus and the Sphenoid Segment of the Base of the Brain. (Freilegung der Keilbeinhöhle und des sphenoidalen Abschnittes der Hirnbasis vom Rachen aus.) L. Löwe.

137. **Restricted Localized Action of Drug.**—Petrow reports extensive research on rabbits in which a drug was injected after the part of the body involved had been shut off by a constricting band from the rest of the circulation. The mode of diffusion of the drug was instructively studied on the rabbit ear injected in the marginal vein with a weak solution of a stain which could be seen diffusing through the tissues as the ear was held up to the light. The tint grew less intense in the vein in a minute or two and by the fifteenth to the twentieth minute the stain had diffused entirely through the surrounding tissue. This interval of twenty minutes suffices

for diffusion of the injected drug and nothing is gained by waiting longer. A stronger solution is no more toxic than a weaker concentration. It is possible that the stronger solution passes more completely through the vessel walls and enters into a more stable combination with the tissues so that it is not yielded up to the circulation so readily as the weaker solutions. Addition of adrenalin did not seem to reduce materially the toxic action of the drug injected, but the symptoms of intoxication were apparently a trifle milder than without the adrenalin.

138. **Access to Base of Brain Through the Nasopharynx.**—Löwe apologizes for adding another to the twenty-one methods on record for exposing the base of the brain, but he justifies his proposed technic by stating that it is much simpler than any of the others; only local anesthesia is required for it, and no incision is made in the face, while the nose is left intact. All that is necessary to have ample access to the optic chiasma, the hypophysis and the anterior pons region is to open up the sphenoidal sinus and this is easily done through the roof of the nasopharynx, pushing mucosa and periosteum apart, the incision in the median line, and opening a passage through the body of the sphenoid. Before the operation a strip of cambric is passed through each nostril and out through the mouth and tied around the ears, thus holding the soft palate out of the way. The tongue is held down by a strip passed in through the pharyngotomy incision and out through the mouth, the ends tied tight together over the chin. The instruments used have to have rather longer handles than usual and be a little stronger to work at the depth required. He describes the technic in detail and mentions a number of anatomic points useful to bear in mind in operating in this region.

Zentralblatt für Gynäkologie, Leipsic

April 3, XXXIII, No. 14, pp. 473-504

139 Spontaneous Tearing of the Umbilical Cord during Delivery. (Spontane Zerreissungen der Nabelschnur intra partum.) F. Unterberger.

140 Transverse Incision for Shortening Round Ligaments in Retroflexion of the Uterus. (Zur Kombination des Pfannenstiel'schen Querschnittes mit Verkürzung der runden Mutterbänder bei der operativen Behandlung der komplizierten Retroflexio uteri.) R. Werth.

April 10, No. 15, pp. 505-552

141 *Treatment of Placenta Prævia. B. Krönig.

142 Bacteriologic Diagnosis of Puerperal Fever. W. Sigwart.

143 *Local Anesthesia in Dilatations of, and Operations on, the Cervix. (Zur Lokalanästhesie bei der Dilatation des Cervicalkanals und Operationen an der Portio.) O. Henrici.

144 Transmission of Syphilis to the Child, and Latent Syphilis in Women. (Das Problem der Luesübertragung auf das Kind und die latente Lues der Frau im Lichte der modernen Syphilisforchung.) H. Bab.

141. **Treatment of Placenta Prævia.**—Krönig protests against the rose-colored statements of various recent writers that hemorrhage from placenta prævia can be readily controlled by version or the metreurynter. To show the contrary, he summarizes the details of twenty cases of placenta prævia at the Freiburg clinic in which the women were under the most favorable conditions in regard to medical supervision in a clinic, asepsis, etc., from the start. Version arrested the hemorrhage during delivery in every instance without fail, but the metreurynter failed occasionally and can not be relied on. The chief danger in placenta prævia is from the recurrence of hemorrhage an hour or so after expulsion of the child or placenta, and the hemorrhage stops then only when the patient collapses so that the blood pressure drops too low for the blood to flow. The bleeding is from the isthmus, as a rule, which explains the failure of tamponing in these cases and the objection to the metreurynter as it stretches the isthmus still further. Four of the twenty patients bled to death and another succumbed to sepsis, and yet the conditions were exceptionally favorable for all. Those who survived suffered long from severe anemia. The more advanced the pregnancy the greater the tendency to hemorrhage. The conclusions from this series of cases are that the results of treatment of placenta prævia are so disappointing by the present methods that it is incumbent on us to seek for improved methods of treatment. He has been looking over the records of the 34 cases of placenta prævia received at the clinic since 1904, in which the date of the first hemorrhage is mentioned; in every instance a warning hemorrhage had occurred during the last few days or weeks before the childbirth. The physician summoned merely ordered the patients to bed and the hemorrhage stopped with the bed rest. These warning hemorrhages recurred three or more times before labor came on, and the physician would have had ample time to send the patient to the clinic if the warning of these premonitory hemorrhages had been heeded. The obstetrician is able to save the mother with contracted pelvis by perforation during delivery in the home, but with placenta prævia both mother and child succumb in 15 or 20 per cent. of the deliveries in private houses. Even in the clinics the mortality is still from 5 to 8 per cent. at the best.

143. **Local Anesthesia for the Uterine Cervix.**—Henrich reports favorable experiences at Freund's clinic at Strasburg with local injection of a solution of 1 part beta-eucain; 0.6 parts sodium chlorid; 8 parts of a 1 per thousand solution of adrenalin, and water to 100 parts. The fluid is injected at four points, directly into the cervix, using about 1 or 2 c.c. It renders the cervix absolutely insensible, doing away with reflex spasmodic contraction and allowing dilatation and incisions without resistance or pain.

Gazzetta degli Ospedali e delle Cliniche, Milan

March 30, XXX, No. 38, pp. 401-408

145 Deformity of Skull and Atrophy of Optic Nerve. **Two** Cases. R. Migliaccio.

April 1, No. 39, pp. 409-416

146 New Clinical Tests for Dosage of Pepsin. (Dosamento della pepsina.) E. A. Fubini.

April 8, No. 42, pp. 441-448

147 *Albuminuria in Aseptic Fevers. S. Lavagna.

April 11, No. 43, pp. 449-464

148 *The Central Vein in the Brow as Means of Identification. (La vena centrale frontale. Indice di identificazione cerebrale.) A. Tamassia.

147. **Albuminuria in Aseptic Fever.**—Lavagna's research on rabbits demonstrated that simple hyperpyrexia alone is unable to induce albuminuria. In infectious processes the albuminuria seems to be the result of the toxi-infection acting on the finer structure of the kidney.

148. **Frontal Vein as Means of Identification.**—Professor Tamassia of Padua suggests that the variations of the frontal vein from the median line are peculiarly individual and characteristic and might well be utilized as a means of anthropomorphic identification. The course of the vein is recorded on a diagram like an anchor, a curved line for the bottom of the brow with a dotted median line from the glabella to the center of the curved line.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

THE INFLUENCE OF SODIUM BENZOATE ON THE NUTRITION AND HEALTH OF MAN. U. S. Department of Agriculture. Report No. 88. Paper. Pp. 784. Washington: Government Printing Office, 1909.

LIFE'S DAY. By William Seaman Bainbridge, A.M., M.D. Cloth. Pp. 308. Price, $1.35. New York: Frederick A. Stokes Co.

WRITING THE SHORT STORY. By J. Berg Esenwein, A.M., Lit.D., Editor of Lippincott's Monthly Magazine. Cloth. Pp. 441. Price, $1.25. New York: Hinds, Noble & Eldredge.

MENDEL'S PRINCIPLES OF HEREDITY. By W. Bateson, M.A., F.R.S., V.M.H., Fellow of St. John's College. Cloth. Pp. 396, with illustrations. Price, $3.50. Cambridge: The University Press, 1909.

FOURTEENTH REPORT OF THE BOARD OF HEALTH OF THE TOWN OF MONTCLAIR, NEW JERSEY. 1908. Paper. Pp. 53.

SIXTIETH ANNUAL REPORT OF THE CENTRAL INDIANA HOSPITAL FOR INSANE. Indianapolis, Ind., 1908. Paper. Pp. 65.

ANNUAL REPORT OF THE BUREAU OF HEALTH FOR THE PHILIPPINE ISLANDS. 1908. Paper. Pp. 182, with illustrations.

BLUTUNGEN UND AUSFLUSS AUS DEM UTERUS: IHRE URSACHEN UND BEHANDLUNG. Von Hofrat Dr. A. Theilhaber. Paper. Pp. 87, with illustrations. Price, 2.50 marks. München: Verlag von Ernst Reinhardt, 1909.

DIE STRUKTUR UND DIE PATHOGENESE DER GALLENSTEINE. Von Dr. med. I. Boysen, in Kolding (Dänemark). Mit einem Vorwort von Prof. Dr. Th. Rovsing, in Kopenhagen. Paper. Pp. 127, with illustrations. Price, 4 marks. Berlin: S. Karger, 1909.

HEMORRHAGE AND TRANSFUSION. By George W. Crile, A.M., M.D., Professor of Clinical Surgery, Western Reserve Medical College. Cloth. Pp. 560, with illustrations. Price, $5.00. New York: D. Appleton & Co., 1909.

DIE BEHANDLUNG DER GEBURTEN BEI ENGEN BECKEN. Von Dr. E. Schjadies, Assistenten der Klinik. Paper. Pp. 246. Price, 7 marks. Berlin: S. Karger, 1909.